THE SUN GATE OF TIHUANACO

AND HÖRBIGER'S WORLD ICE THEORY

EDMUND KISS

The sun gate of Tihuanaku and Hörbiger's world ice theory

From

Edmund Kiß

With over 100 illustrations

HERITAGE

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I

The highlands between the Andes and the prehistoric city on the sloping lake

In the north of the continent of South America, between the mountain ranges of the Andes, the Pacific and the Royal Cordillera, lies an extensive plateau, part of which belongs to Peru, another part to Bolivia and a small part to Chile. The indigenous people call the plateau the Altiplano or, more commonly, the Meseta, because over long stretches it gives the impression of a flat table (Fig. 1). Nevertheless, there is no lack of hills and mountains on the meseta, which, however, compared to the mountain ramparts that connect the plateau with snow-covered peaks all around are low.

The highlands extend over a width of about 200 kilometres, i.e. the width of the space between the two Andes, sloping gently from north to south from about 15 to 25 degrees south latitude, i.e. over a distance of about 1200 kilometres. While in the north the so-called Cordillera Crucera, the crossing Cordillera, seals off the Meseta from the highlands of Peru, which run into the Amazon lowlands, the Meseta in the south has no equally significant mountain wall. Here the highlands end quite abruptly with the saltpetre fields of Chile on the Pacific coast, which drops very steeply to the Pacific Ocean. The Andean wall of the Cordillera de los Seas does not rise very high above the plain of the Meseta, creating a kind of sack that is open to the south.

This high plateau between the Andes, which stretches from north to south in the shape of a sack, has an average height of around 4,100 metres above sea level. In almost all places, the mountain ranges of the Cordilleras that enclose it tower above the meseta by around 700 metres, with the majority of the mountain ranges exceeding it by a further 500 metres, crowned by peaks among which heights of 5500 metres above sea level are not uncommon.

Nevertheless, there are narrower or wider gaps in the mountain wall in some places, one of which has already been mentioned, namely in the south at the Great Ocean, on the saltpetre fields of Chile. There is another gap at Mount Sorata and a third near the Bolivian capital La Paz, next to Mount Illimani. The plateau and surrounding mountains are *palaeozoic*, i.e. their rocks consist mainly of granites, gneiss, trachytes and younger lavas. Tertiary formations, i.e. genuine sedimentary rocks, are absent. As a result, the country also suffers from a lack of lime, as there are no real limestone rocks, but at most deposits of organic lime on former lake shores and in dried-up waters.

Tertiary deposits are only found on the eastern side of the Royal Cordillera, i.e. on the Argentinian and Paraguayan side of the Ostande.

Professor Posnansky, one of the best connoisseurs of the Bolivian highlands, has laid down the presumed history of the formation of the Andean highlands and its lakes in a small work entitled `"El clima del Altiplano"` (La Paz 1911). During the slow rise of the South American continent, large quantities of seawater are said to have been lifted up by around 4000 metres in the area where the Meseta is located today, forming extensive lakes of various heights and enclosed by the Cordillera. The large lakes enclosed between the Cordillera and its transverse barriers had no outflow or only such a small outflow that there was no influence on the volume of their water masses and that they essentially maintained their level for a long time. Later, one of the earth tremors that are still frequent in South America today broke up the Cordilleras at various points, and the waters of the great lakes, freed from their restraints, ran in part through these erupted outflows to the Atlantic. In doing so, they opened up the river channels into the Amazon and La Plata lowlands.

A second, later outflow of the large volume of water that reaches the Altiplano

According to Posnansky, the land was covered by either a sudden or prolonged uplift of the ground, namely that part which is now covered by Lake Titi- kaka, and then the parts of the land further south, such as the areas around Lake Poopo and the salt lagoons of Coipasa, Uyuni, Askotan and Atakamama, together with their surrounding areas, sank.

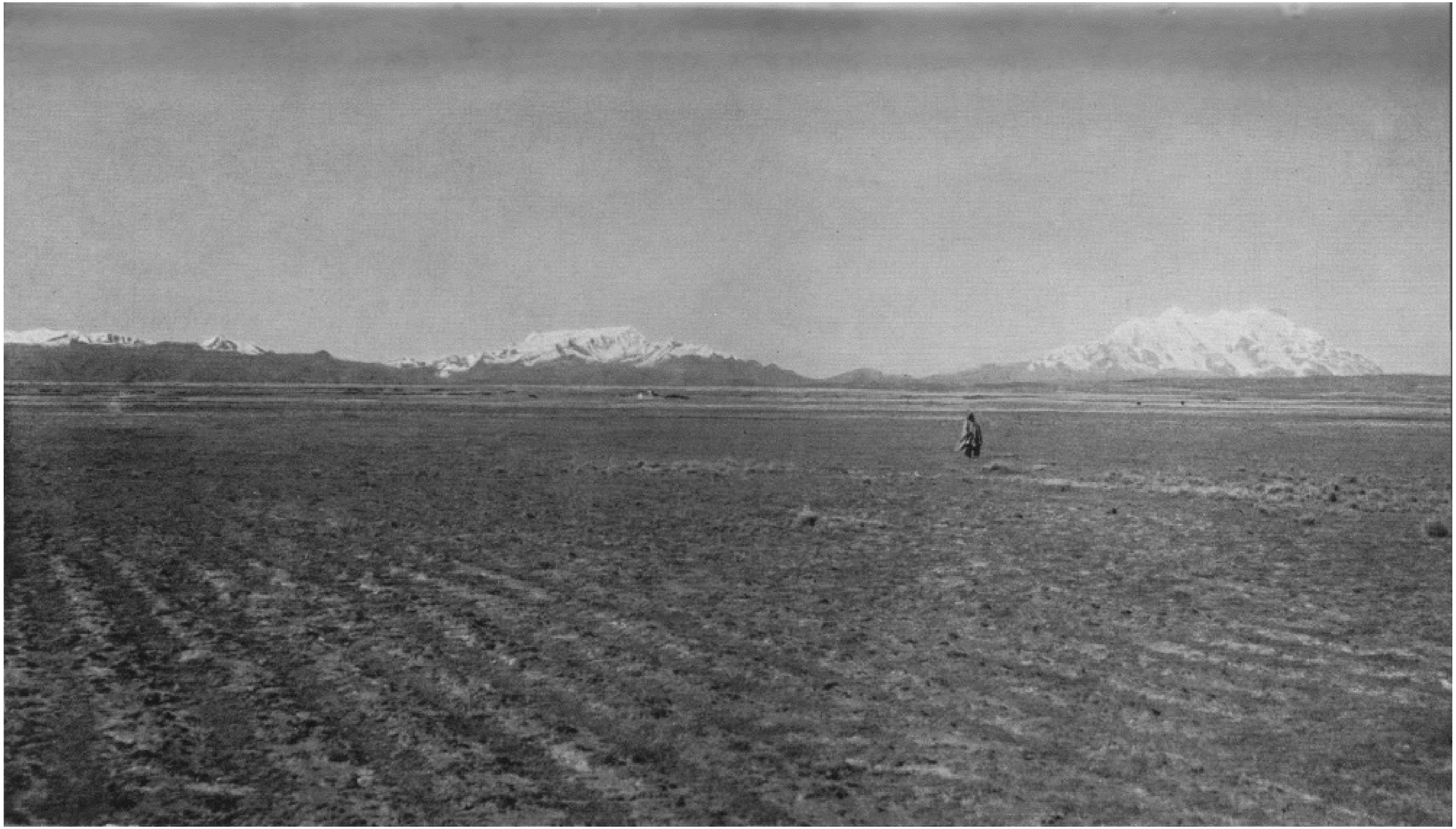


Fig. 1: The highlands between the Andes of South America, a former seabed. At the foot of the marginal mountains on the left side of the figure, the straight line of the ancient water basin can be recognised. Phot. Professor Arthur Posnansky in La Paz.

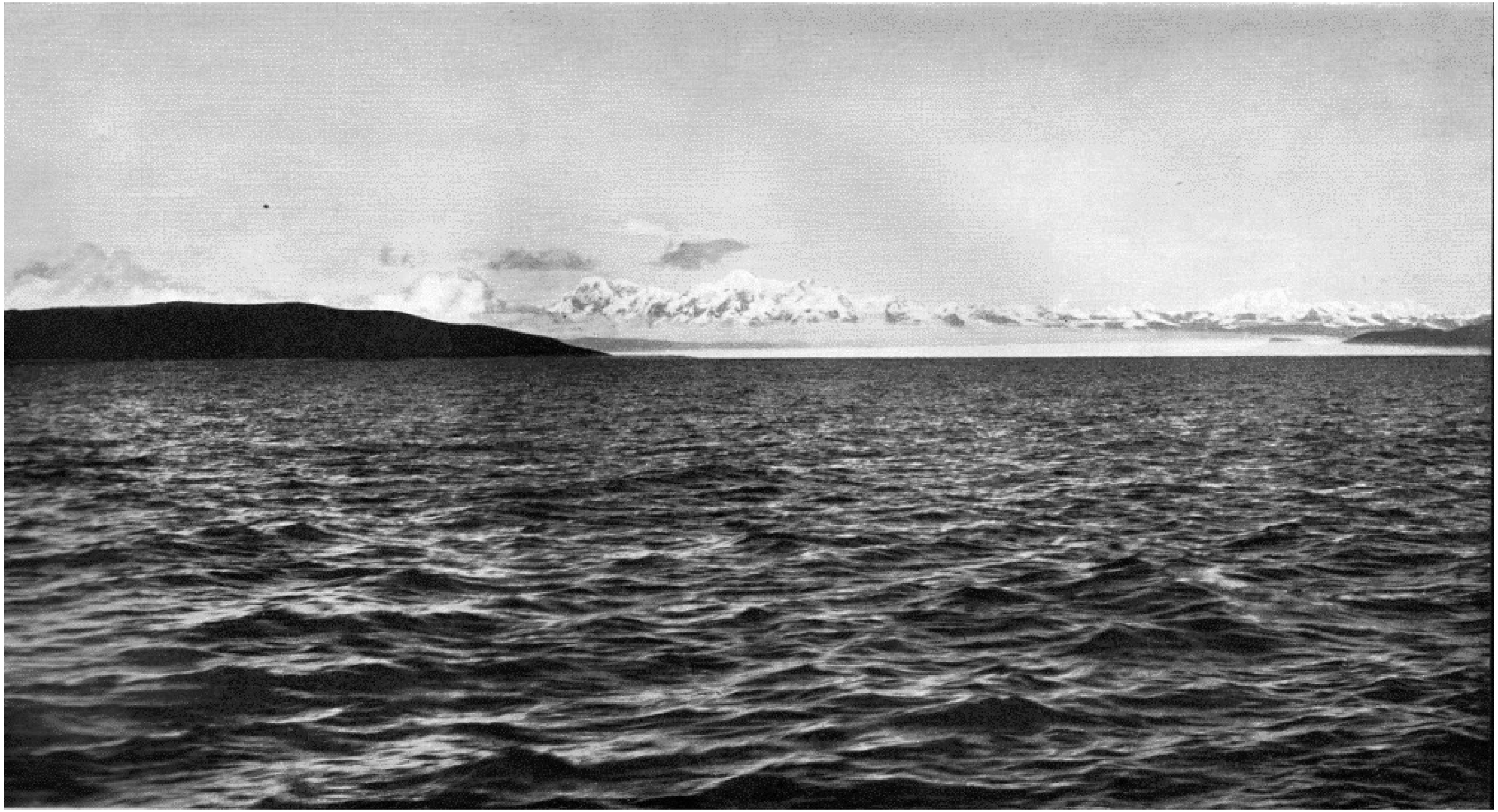


Fig.2 Lake Titicaca, a "remnant" of the former enormous bay of Tihuanaku. In the background is the Royal Cordillera, the mountain wall that closes off the Andean highlands on the eastern side. The black island on the left is the Incas' island of the moon.

Phot. Professor Arthur Posnansky in La Paz.

that accompany them. Since this elevation in the south was not as strong as that in the north, the water of the great lakes had to flow southwards, i.e. to Paria, Lipez and the desert of Atakama, where traces of this drainage are still visible today.

It is obvious that such assumptions of subsidence of entire countries, in this case one can already speak of a subsidence and tilting of almost the entire continent, were caused by visual evidence, since all signs indicate that the continent of South America used to have a different position, i.e. that it is "tilted" today, as will be shown later. Therefore, such an assumption of continental tilting is not unreasonable in the absence of any other viable explanation for the water drainage and the "tilted" position of the South American mainland.

The drainage of the ocean remnants on the highlands caused by the barrier breaches and the subsidence and uplift of the land was not complete. Considerable remnants of the former quantities of water remained, which today form the lakes Titikaka, Poopo, Coipasa etc.. A glance at a map of Bolivia, Peru and northern Chile shows that these remnants are still very significant, and Fig. 2 is perhaps a better illustration of the areas of water still present in Lake Titicaca, for example.

According to Posnansky, Lake Titicaca is the remnant of a mass of water that The fact that the lake's fauna, which is now degenerate, is very similar to marine fauna, and in some cases is still true marine fauna, confirms the idea that the lake was "lifted from the oceans in the Tertiary period". After all, real seahorses are still caught in the lake, which otherwise only live in tropical or at least subtropical waters. However, the fact that the presence of marine fauna in the lakes does not necessarily mean that the water masses have been "lifted out of the oceans" will be explained in a later section.

Posnansky says that it is clear that the change in altitude of the Meseta caused the water in the lakes to become colder. As a result, the lake's fauna degenerated and no longer had the same living conditions as before, namely warmth and sufficient food. The chemical composition of the Titicaca water is still the same today as that of the oceans, despite the passage of perhaps millions of years during which the water was enriched by the abundant supply of meltwater from the Andean glaciers.

and supplemented by rainfall, but which also had to replace the not inconsiderable amounts of water that flowed through the Desaguadero into the Poopo, where most of it evaporated or seeped away. The enormous quantities of salt that formed as a result of this evaporation and seepage can still be seen today in the salt lakes of Coipasa, Uyuni, Askotan, in the desert of Atakama and in the entire eastern fold of the Cordillera as far as the coast of Chile. They all show the path that the salty waters have taken or where they once stood.

The Altiplano, or rather those parts of the highlands that were not covered by water, i.e. islands, had a flora that has nothing to do with that of today, but which has degenerated in its remaining species. There are ferns of stunted growth, which today have to eke out their lives on soil and in a climate that does not suit them, but on which they must once have risen in proud splendour. Posnansky says that all this clearly shows that in earlier times a warm climate must have prevailed on the 4000 metre high Altiplano and that lush plant growth reached up to the highest heights of the mountains overlooking the Altiplano. That he is not saying too much with this statement is proven by the so-called stepped fields, which were used for agriculture and which can even be found on the Illimani, for example, where they disappear under the eternal ice at an altitude of around 5500 metres, meaning that they must have reached even higher in the past. And where there are such stepped fields, built from rubble and quarry stones, which were formed into retaining walls to prevent the topsoil from being washed away, there must also have been plant growth. Agricultural products were therefore obtained at altitudes of at least 5500 metres above sea level, i.e. in places that no longer have any plant growth at all today.

The stepped fields mentioned are not only found on the Illimani, but on the entire highland and its surrounding mountains, from there to Kuzko in Peru and southwards to Poopo.

However, Posnansky also draws attention to the clear signs of ice ages in the tropics, which without question must have actually passed over the tropical areas of the Andean highlands at some remote time. On the Rodadero near Kuzko there are very beautiful drum-shaped rocks, into which the famous stone seats near the prehistoric fortress of Saxahuaman have been carved (Fig. 4 and 5). Posnansky therefore writes in his above-mentioned work "El clima del

`Altiplano"`, the geological appearance of the Andean plateau and its cordillera clearly shows that one or more glacial periods have passed over it, during which the continent was covered with ice and snow, up to an altitude below the present-day town of Kuzko. Since this city is located about 3100 metres above sea level, one of the glacial periods mentioned above reached up to perhaps 3000 metres in the already quite tropical areas - Kuzko is located at about 14 degrees south latitude and has a warm climate today. This close juxtaposition of tropical and glacial traces in one and the same place close to the earth's surface is very puzzling, and not only Professor Posnansky has found this to be the case. Nevertheless, it must have been the case that in the areas of the Meseta close to the tropics there were at times real ice ages, and according to Posnansky it is more than likely that these periods of cold were experienced by prehistoric man just as much as he enjoyed the times of warm or even tropical climates.

If you have a secular movement in the vertical plane with a large
If we are to accept the existence of the Altiplano as probable at all, then Posnansky's explanation is quite plausible, but from the same point of view, when an ice age occurs, the continent must have undergone the exiting movement once before, in order to reach the new glacial period via a renewed descent to a tropical climate through a renewed rise. Therefore one can come to the conclusion that the Altiplano was not always, as it is today, a godforsaken, sterile and cold region, but that it went through all stages from the ice age climate to the tropical one in repeated displays. Posnansky mentions the likelihood of great volcanic activity during the uplift and subsidence of the continent, because there is geological evidence of this on Meseta that is hardly to be found anywhere else on earth. These are the extensive layers of volcanic ash, which vary in thickness from around 30 cm to around 600 metres and cover the entire plateau almost without exception. At La Paz, which lies in a wide basin with very steep walls, this layer of ash (`Toba volcanica`) can be seen near the upper edge of the Alto La Paz plateau at a thickness of around 6 metres. It lies directly on a thin layer of lignite, giving the impression that the ash layer had a carbonising effect on the lush vegetation below. Above the ruins of the prehistoric

The city of Tihuanaku is covered by a layer of ash, so that Posnansky's assumption that a tidal wave that destroyed the city was accompanied by severe earthquakes and volcanic eruptions is probably correct. Fig. 3 shows what the layers above and below the sediment of the "`Toba volcano`" look like. This drawing was made after Posnansky's measurements at Ulloma on the Desaguadero. A be-

The first evidence that humans in the Andean highlands experienced a warm climate is therefore the prehistoric city of Tihuanaku, but according to Posnansky there is also evidence that humans witnessed a glacial climate.

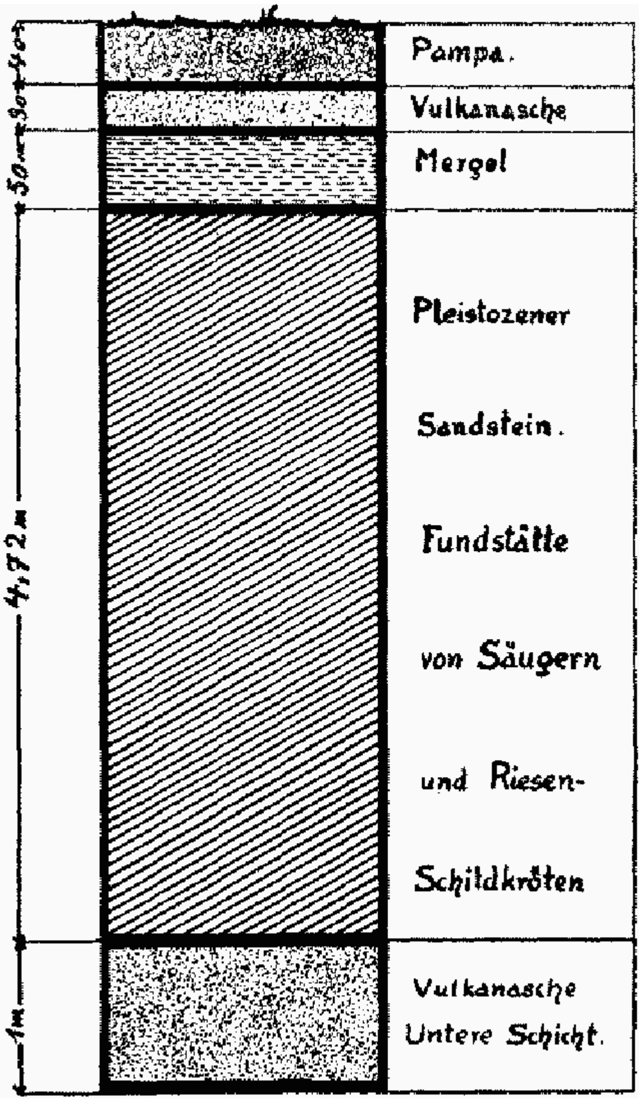

40
30
50 cm
4,72 m
1 m
Pampa.
Vulkanasche
Mergel
Pleistozener Sandstein. Fundstätte von Säugern und Riesen-Schildkröten
Vulkanasche Untere Schicht.

Fig. 3 Sediment layers at Ulloma on the Desaguadero in Bolivia, drawn from field surveys by Professor Arthur Ponansky in La Paz.

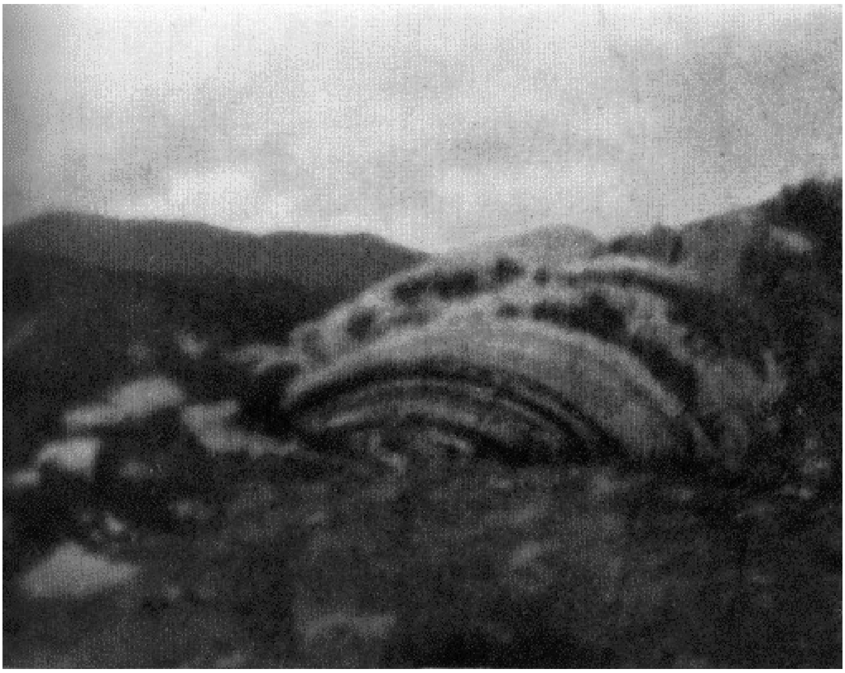


Fig. 4: Drum-shaped glacier cut on the Rodadero at
Kuzko in Peru, at around 3100 metres above sea level. Today, wheat and maize fields grow at this altitude.

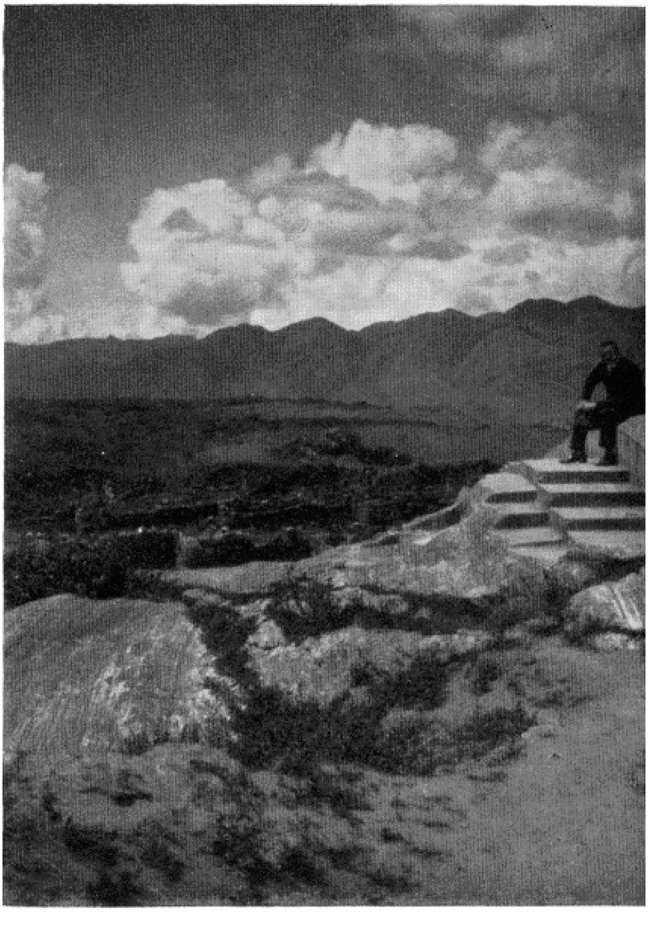


Fig. 5: Glacial striations on the Rodadero near Kuzko in Peru with carved step seats whose access steps follow the drum shape of the glacial striation.

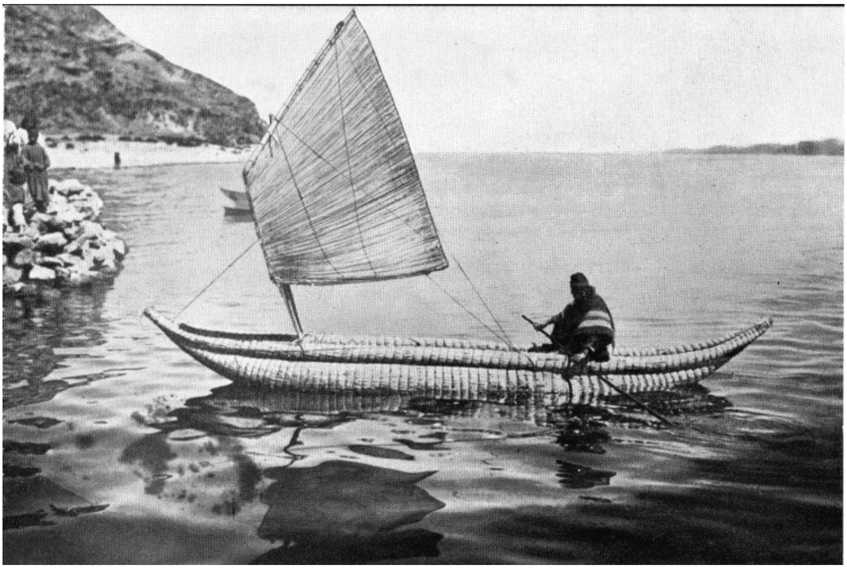


Fig. 6 Indian fisherman in his balsa made of rush wickerwork with a rush sail on Lake Titicaca. Phot. Professor Arthur Posnansy in La Paz.

Fig. 7: The extinct volcano Kijappia on an island in Lake Titicaca. On its slopes are the quarries from which the builders of the ancient harbour city of Tihuanaku transported the andesite lava, their building material for the large buildings of their city, over a distance of around 50 km by sea. Phot. Professor Arthur Posnansky in La Paz.

Posnansky believes he has found traces of pre-Ice Age man on the Altiplano. In 1914, he published the following view in the first volume of his work "A Prehistoric Metropolis in South America" on p. 18.

"The most conclusive and unimpeachable proof possible in this respect in the first place is that Lake Titicaca, as a result of its great water loss, now exposes ruins of hewn stone belonging to a period much earlier than the second Tihuanaku period, and even earlier than the so-called first Tihuanaku period. I must therefore conclude that in the pre-Tihuanaku period the extent of Lake Titicaca was considerably less than at the time of the heyday of the great metropolis."

Posnansky came to this conclusion through the discovery of prehistoric settlements in Lake Titicaca near Desaguadero (Pariti, Patapata- ni). In 1931, a new find was added to the others, namely on the island of Siminake in the Jakonta Palayani part of Lake Titicaca, a bay. Here Posnansky found a building whose walls were 3.25 metres thick. The researcher wrote about this find in the newspaper El Diario in La Paz on 14 July 1931:

"It is known that the earth went through several ice ages, during which vast lakes and meltwater formed, and the Titicaca, which once covered the Bolivian-Peruvian plateau, was such a glacial lake ... Undoubtedly, the culture of Siminake ... is infinitely old, because this building must have been built before the ice age, when Lake Titicaca was not yet as large as it is today, and which later stretched its waters over the entire Altiplano."

Posnansky thus speaks very clearly not only of periods of warm climate, but also of glacial periods or ice ages. The uplifts and subsidence of the continent of South America that he advocates are thus considerably more frequent, and the difficulties that such a repetition of the same movement of the same oscillatory character presents for a continental shelf should be explicitly pointed out. This is not only important for the approximate determination of the age of Tihuanaku, but also for the temporal determination of the frequent climate change, a climate change, starting from the marine equilibrium of the mainland in the Tertiary through all intermediate stages to the glacial climate, and indeed the *climate change in several repetitions*!

Despite these difficulties, however, it must be assumed that yes, it is

It is much more certain that this repeated climate change took place, however difficult the interpretation may be, as the geology of the Altiplano speaks too clearly for the fact itself to be in doubt. The improbability of accepting the uplift and subsidence of the continent lies in the frequent repetition of the movement. And these difficulties accumulate when, as Posnansky states, the continent "tilts" not only once but repeatedly, i.e. tilts as it were, only to return to the horizontal each time. All this is said to have happened in conjunction with simultaneous or successive uplifts and subsidences!

The fact that such assumptions lose all credibility if the origin of several superimposed shorelines of ancient water basins is to be explained will perhaps be recognised in the following.

After this brief description of the Andean meseta and its former climatic conditions, the great lakes must be mentioned in more detail, since on their shores and in the mountains surrounding the plateau, as if by a mysterious and hidden hand, straight lines have been painted on the rock faces, the interpretation of which is not entirely simple, as the following remarks will show.

In order from north to south are the lakes Umayu, Titi- kaka, Poopo, Coipasa, Uyuni, Askotan and Atakama. Their continuation, already located in Chilean territory, are the well-known salt and salt-pan deserts, also formerly large lakes, which have now dried up and seeped away. The total extent of this chain of lakes, lagoons and salt flats is not exactly known to the author, but the length may be approximately that of the entire meseta, i.e. 11-1200 km, whereas the width is only about 200 km, corresponding to the space between the two Cordilleras, with an extension at Atakama and Ascotan, corresponding to the plateau area, which is enclosed like a sack between the volcanic and royal Cordillera together with the Cordillera crucera. There are also smaller lakes at higher altitudes in some parts of the Andes, which owe their water to the melting snow and glacial masses that cover the mountains. These are therefore smaller freshwater lakes. Their altitude is often very high. Such lakes can still be found at 5000 metres above sea level.

The medium altitudes of the large salt marshes listed above by name are seen of the highlands between the Andes, again in the order from north to south, according to levelling by Professor Arthur Posnansky in La Paz.

Umayu and Titikaka3812 m
Poopo3673 m
Coipasa3667 m
Uyuni3650 m(?).

As far as I know, the other salt lagoons have not yet been precisely measured - the information on Bolivian and Chilean maps is inaccurate - but they may have about the same level as the Uyuni.

Lake Titicaca sends its surplus water, which it receives not from springs and rivers but from rainfall and glacial meltwater, close to the Bolivian harbour town of Guaqui through the Desaguadero, the "drainer", to the Poopo, with a gradient of 139 m over a distance of about 400 km (about 300 km as the crow flies).

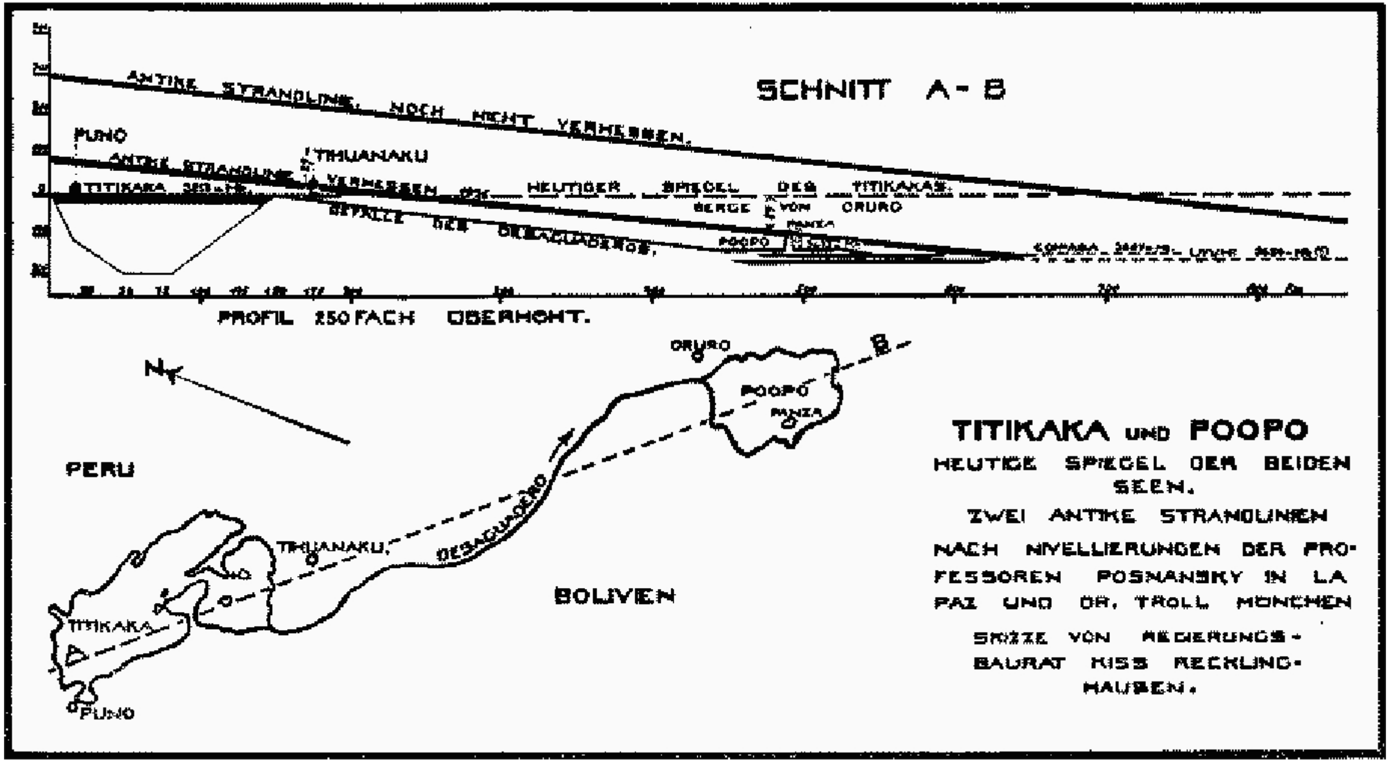
The Poopo drains through the Aullagas to the Coipasa, flowing underground in places. It only has a gradient of 6 metres over a distance of around 100 km from the Poopo to the Coipasa. The Aullagas therefore virtually creeps across the meseta. As far as I know, the Coipasa has no outlet. Its water seems to evaporate by the amount that is supplied to it by rainfall, ice melt and the Aullagas. In addition, like the Poopo, it suffers from strong seepage. The same applies to the Uyuni, Askotan and Atakama, which, like the other salt and saltpetre fields, lie dry for most of the year.

With the exception of the slightly lower lying saltpetre fields, the climate of this entire region is harsh and cold, although frosts below -2° C are rare. This also explains why the highlands are so sparsely populated today by a few poor Indians who eke out a living from farming and, more often, fishing (Fig. 6).

On both sides of the mountain slopes of the Cordillera, but also on the hills - once islands - that rise up here and there in the plateau itself, the traveller is accompanied, sometimes clearly, sometimes blurred, by natural water level marks in the form of rock erosion caused by former surf, as the delta formation of ancient streams and rivers, whose deposits spread out in a fan shape at the same altitude over flat and low slopes, and finally - and they are the clearest signs, especially for the layman - as broad, grey-white bands of crystalline limestone on substrates of granite, porphyry and amorphous slate. These bands often disappear, but then they are usually bent off into valleys, so that they are suddenly encountered again. These strand lines are of course most frequently seen in the vicinity of both cordilleras, less often when crossing the plateau itself, unless you find island-like hills along the way that also bear them.

The white calcareous bands on the edge mountains of the Meseta are deposits of calcareous algae species. Such algae still grow in many places in Lake Titi- kaka and Poopo. According to Posnansky, these are algae that contain up to 80% calcium carbonate, such as Elodeas, Mirphillium, Characea, Potamogetum and others. The thick deposits, several metres thick, which largely form the ancient limestone shorelines, can be explained by the fact that these or similar calcareous algae grew on the shores of the ancient lake. In other places on the Altiplano of Bolivia, too, these beach lines accompany the traveller with great persistence. They can sometimes be seen on the shores of Lake Titicaca, although not everywhere with the same clarity as at Poopo. The formation of such calcareous algae is bound to shallow, muddy shores, and steep ones do not allow it. On the islands of Lake Titicaca, e.g. on the famous Sun Island of the Incas, the limestone band is very distinct. The shoreline on Sun Island is, it should be noted here, considerably higher than at Oruro on Lake Poopo, as the level of Lake Titicaca is 139 metres higher than Lake Poopo. It would therefore appear that the limestone bands are the boundaries of different lakes with different levels above the sea.

Further, such bank marks can be found along the entire stretch between Guaqui and La Paz, then along the entire course of the Desaguadero at Nazacara, Ulloma, Corrocoro, La Joya, Rosapata, in short, along the entire 500 kilometre stretch between Titicaca and Poopo. Nevertheless, it is enough to see it as proof that the salt lakes and lagoons still existing today formed a single, coherent water surface in prehistoric times, from which only dry land protruded here and there as islands. However, it is at least reasonable to assume that there were once a large number of very important lakes, albeit at different levels, on the highlands of Peru, Bolivia and Chile.


SCHNITT A-B
ANTIKE STRANDLINIE, NOCH NICHT VERMESSEN.
PUNO
ANTIKE STRANDLINIE, VERMESSEN
TIHUANAKU
TITIKAKA
HEUTIGER SPIEGEL DES TITIKAKAS.
BERGE VON ORURO
PANZA
GEFÄLLE DES DESAGUADEROS.
POOPO
PROFIL 250 FACH ÜBERHÖHT.
N
PERU
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A
PUNO
TITIKAKA UND POOPO
HEUTIGE SPIEGEL DER BEIDEN SEEN.
ZWEI ANTIKE STRANDLINIEN
NACH NIVELLIERUNGEN DER PROFESSOREN POSNANSKY IN LA PAZ UND DR. TROLL MÜNCHEN
SKIZZE VON REGIERUNGSBAURAT KISS RECKLINGHAUSEN.

Fig. 8: Two superimposed shorelines, sloping from north to south, in the shore mountains of the large Andean lakes Titikaka and Poopo, drawn after levelling by Professor Arthur Posnansky in La Paz.

must have been. However, the fact that there were not several lakes of different heights, despite the beach lines lying at completely different heights, will be demonstrated below.

The fact that the water level of today's lakes was once significantly higher is also proven by the hydraulic structures of a prehistoric city, namely the city of Tihuanaku. The fact that such a large city, whose buildings and dimensions are reminiscent of modern cities, was able to develop on the now inhospitable and harsh highlands of Bolivia can only be explained by the fact that the country's climate in Tihuanaku times was warm or at least temperate. At the time of Tihuanaku, the highlands were inhabited by a densely packed population. Proof of this can be seen in the terraces which, from Kuzko in Peru to about Oruro in Bolivia, extend over a length of about 1200 kilometres and a width of about 200 kilometres, covering every mountain and every hill, even in the countless side valleys and gorges, right up to the highest mountain peaks, with fine-meshed networks similar to notation lines, and which coincide in hundreds and hundreds of layers on every significant mountain. The stepped terraces are made partly of house stone and partly of rough blocks and were used for farming purposes. If one considers that only 40 of these terraced fields, each 1000 kilometres long, would span the earth, the total length of the stepped structures built by human hands can be *measured* without hesitation at *several times the length of the sun*.

The stepped fields do not run in a straight line, but wind through hundreds of valleys and ravines and back again, run around hundreds of mountains and hills and can be found deep into both cordilleras. If they were used today, all these stepped fields could feed a population of millions and apparently did so in prehistoric times, namely the population of the Tihuanaku empire, whose cultural and social centre seems to have been the city of the same name.

The town of Tihuanaku is located near the railway station of the same name on the Guaqui-La Paz line in an elongated valley flanked on both sides by low mountain ranges. At a distance of about 20 kilometres you can see the blue waters of Lake Titicaca flashing in the distance, and on a clear day the mighty snow-covered cone of the extinct volcano Kijappia 50 kilometres away (Fig. 7). The quarry, from which from which the builders of the prehistoric metropolis of Tihuanaku obtained the andesite lava from which some of their large buildings were constructed.

The pampa of Tihuanaku is 27 metres higher than the level of Lake Titicaca. The old city - an extensive and semi-buried field of ruins - is now located high up on dry land at 3839 metres above sea level. Nevertheless, it still has five harbour basins, some of which are still quite recognisable, namely two north of the ruins of the Kalasasaya solar observatory (Fig. 9), two near the mausoleum buildings of Puma Punku (Huma Punku - water gate! Fig. 10) and one in the small, modern country town of Tihuanaku itself. The site of the northern harbour is the best preserved, as parts of the former pier walls still exist here, consisting of heavy house stone blocks. It can still be seen today that they opened up a harbour basin just north of the Kalasasaya solar observatory. An entrance was provided to allow ships to dock. From the harbour pier, the terrain slopes down abruptly to the north and to today's lake, and the visual impression is that this lowland was flooded by water for a long time and that the nature of the soil is completely different from that of the solid land of Tihuana- ku. Even today, the difference in terrain is 11 metres at the northern pier and as much as 27 metres at the western harbour of Puma Punkus, a difference that brings the plain below Puma Punkus to the level of Lake Titika. Remains of carefully crafted stone piers can be found in various places around the ruins. A wide, artificially created harbour channel (Fig. 9) runs around the Bering, which contains the main buildings of the large metropolis, namely Akapana Castle, the Kalasasaya solar observatory, the so-called Old Temple, the Palace of Sarcophagi, the underground dwellings of the lords of Tihuanaku and other buildings that have not yet been excavated and surveyed.

The character of the town of Tihuanaku as a harbour of considerable size should thus be proven, even if it is situated high up on dry land and about 20 km from Lake Titicaca. But since, as the levelling work of Professor Posnansky in La Paz has established, the above-mentioned beach line runs about one metre below the upper edge of the jetty of the northern harbour of Tihuanaku, this is further clear evidence, that the old city actually once stood on the larger Lake Titicaca and that the builders of that distant time had their building material, the glass-hard Andean rock, brought in huge blocks, some weighing over 100 tonnes, from the now extinct island volcano Kijappia.

This would provide conclusive proof that the chain of lakes once existed as a huge, continuous mass of water, or at least separated into a few large lakes, and that the Andean metropolis of Tihuanaku was located on an island of this lake or chain of inland seas. It is only necessary to imagine the level of Lake Titicaca raised by 27 metres, so that the waves wash against the piers of the prehistoric city as they did unmeasured periods of time ago.

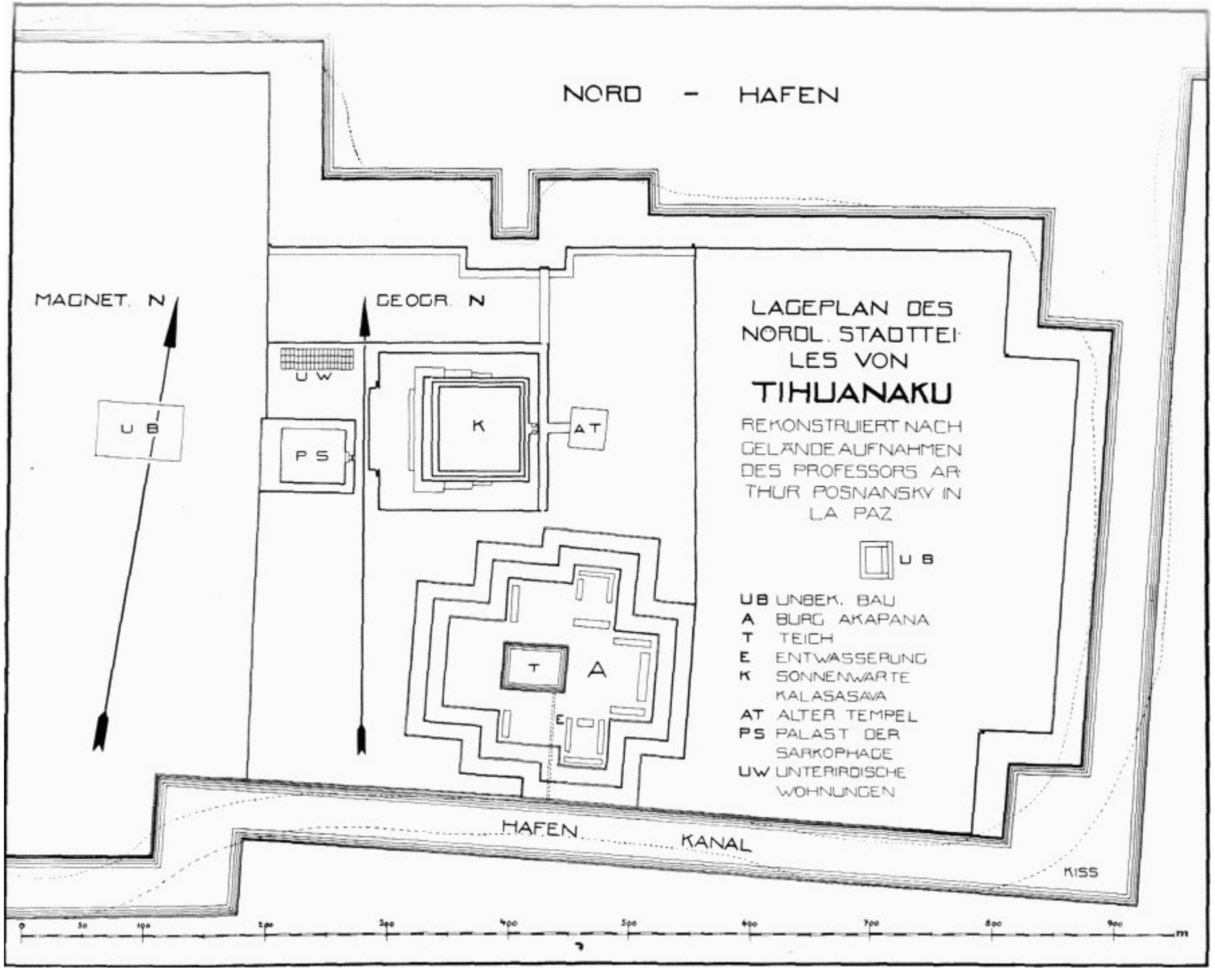
But here, where the proof seems to be so irrefutable that doubts can no longer really be avoided, the first difficulties set in, which until recently seemed to defy any solution.

Even if the mirror of the Titicaca were to be extended to the south without raising it to the piers of Ti- huanaku, the resulting lake would run 27 metres below the harbour walls of the old metro pole. It would therefore not be possible to use the elevated harbour buildings. However, if the imaginary level of the Titicaca mirror were to be extended even further south across the entire Altiplano, the lake thus created would cover today's Poopo with a water column of 139 metres, but in Argentina and on the Pacific coast, it would flow out hopelessly into empty air. The result would be a lake that would immediately drain southwards and south-westwards into the oceans.

The case becomes even more hopeless if one imagines the level of Lake Titicaca rising as high as is necessary to make Tihuanaku a harbour city again, as it certainly was according to the above evidence, namely by 27 metres. Then the water of this imaginary lake would flow out into the oceans with unprecedented force, and the level of the lake would return to roughly the same level as it is today. The harbours would once again be unusable, and no amount of sea enlargement would be sufficient to return them to their former state.

One could now come up with the idea that the water of the world's oceans was so high at some time, for example in the Tertiary period, that it reached the harbour moles of Tihuanaku or, as Professor Posnansky believes, that the continent was so low that there was a connection with the oceans, and that the Andean lakes were lifted up with the rise of the South American land masses.

Here, too, appearances seem to favour the scientists who claim that the Andean lakes originated from the Earth's oceans.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REKONSTRUIERT NACH GELÄNDEAUFNAHMEN DES PROFESSORS ARTHUR POSNANSKY IN LA PAZ
U B
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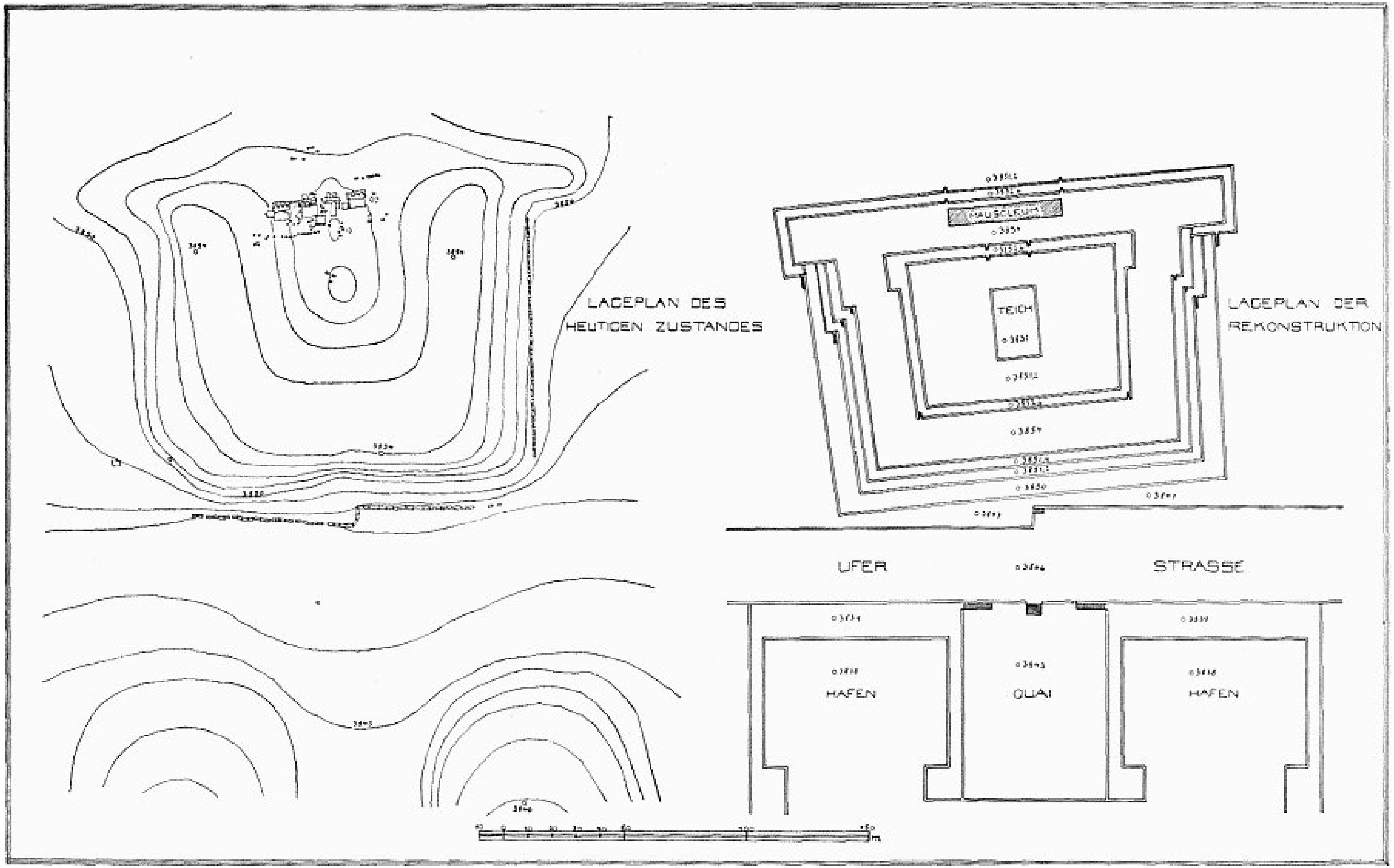
Fig. 9 Site plan of part of the prehistoric city of Tihuanaku in Bolivia. Reconstruction based on his own photographs and those of Professor Arthur Posnansky in La Paz.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m.

Fig. 10 Site plan of the Puma Punku mausoleum and its two harbours.
Site plan based on photographs by Professor Arthur Posnansky in La Paz. Reconstruction of the site on the right.

Because there is no doubt about it. The chemical composition of the large lakes in the highlands is the same as that of the oceans, except that the salt content of Lake Titicaca has been greatly reduced by thousands of years of sweet rain and glacier water, so that the water in this lake is more brackish than salty. The Poopo, on the other hand, is so salty that the fish fauna washed in from Lake Titicaca by the Desaguadero can no longer reproduce, but perish. The other lagoons further south are true brines or almost dry salt fields. These are in fact former ocean areas that are now located at high altitudes (around 4000 metres).

But even if one were to admit that the sea had at some time been so high that the harbours of Tihuanaku could fulfil their purpose as harbours, or conversely that the South American continent had been almost 4000 m lower in altitude, the harbours would be usable again if the ocean level were about one metre below the northern sea level of Tihuanaku, but the puzzle would still remain that the old basin outlined by the shorelines would not be filled exactly. The continent would therefore have to be tilted northwards by a certain angle and upwards in the south in order to fill the old sea basin again. No matter how high or low one imagines the level of today's lakes to be, the newly created levels never coincide with the actual shoreline. Their actual course and the horizontal projections of the exactly plane-parallel raised or lowered mirrors of today's lagoons always intersect somewhere at an acute angle. They cannot be brought into alignment. There was still an unknown here, which until recently was one of the greatest mysteries of the high plateau between the Andes, since the existence of these shorelines was known, but not their exact course and not the fact that it was a coherent line and not shorelines of different lakes with different mirror heights.

In November 1926, Professor Arthur Posnansky undertook a research trip from Lake Titicaca by water through the Desaguadero to Poopo and Aullagas in order to remove the unknown from the calculation and to prove that the observed beach lines were the boundaries of a single, gigantic closed lake with a single level. With the help of several types of measurement, namely the levelling instrument, determined the course of the beach line. Hanns Hörbiger in Mauer near Vienna and the author of this book, with the authorisation of Professor Posnansky, recorded the results of this survey, which was carried out within 40 days, in three sketches, which are reproduced in Figs. 8, 11 and 12.

We would like to take this opportunity to thank the selfless scholar in La Paz.

To determine the position of the beach line (on Fig. 8 section A–B, lower oblique,

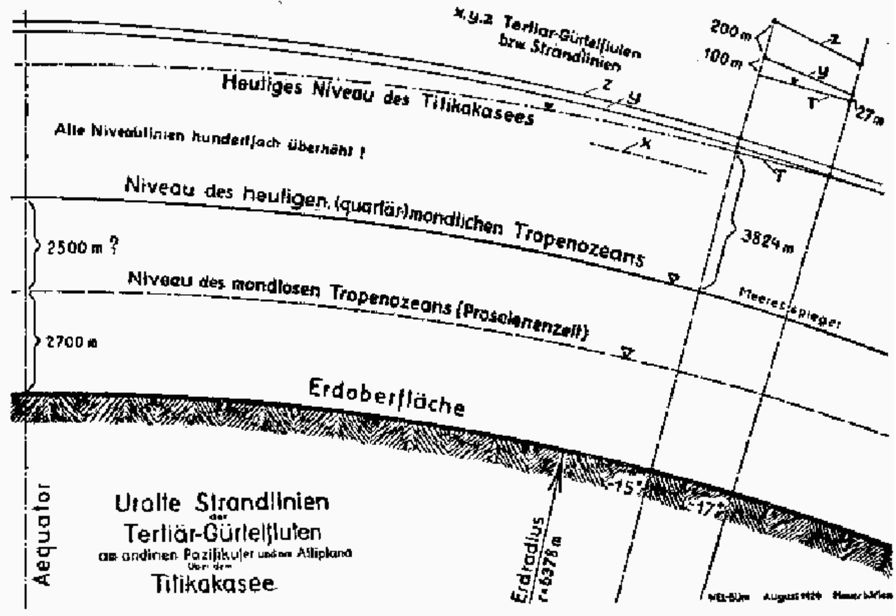

x, y, z Tertiär-Gürtelfluten bzw. Strandlinien
200 m
100 m
z
y
x
T
27 m
Heutiges Niveau des Titikakasees
Alle Niveaulinien hundertfach überhöht !
Niveau des heutigen (quartär)mondlichen Tropenozeans
2500 m ?
3824 m
Meeresspiegel
Niveau des mondlosen Tropenozeans (Prosolenenzeit)
2700 m
Erdoberfläche
Aequator
Uralte Strandlinien der Tertiär-Gürtelfluten am andinen Pazifikufer und am Altiplano über dem Titikakasee
Erdradius r=6378 m
15°
17°
August 1924

Fig. 11: The WEL interpretation of the two ancient strandlines Y and Z above the present level of Lake Titicaca on the Altiplano between the two Andean chains of South America (15 and 17° south latitude). - The ocean rise of 2500 metres at the equator occasionally at the beginning of the Quaternary Moon, which is described as questionable, is not entirely certain because the mouths of large ancient rivers are missing on the west coast of tropical America. - The more recent images of the submarine Congo Fjord still show a hint of the old fjord up to a distance of 2° from the present coast at a depth of 2300 metres. - But 2000 metres of the ocean rise have been measured with certainty, to which the depth of the mud filling the channel out there must be added, but this could not yet be measured. - The beach line X could of course only be found on the west side of the West Andean chain, i.e. on the Pacific shore (together with Y and Z). - The small secondary figure at the top right shows the two shorelines Y and Z together with T and their presumed mutual adjacency, exaggerated fourfold (i.e. 400 times). (Hörbiger's text.)

Y) on the paper, a 250-fold distortion of the height scale had to be applied. Only in this way was it possible to visualise that the aforementioned beach line does not run horizontally, but at an angle, sloping from north to south. It does not lose its straight nature, it is only "oblique" This proves that the apparently different shorelines of several lakes are in fact the boundaries of a single continuous body of water, an inland sea that stretched over the entire highlands between the Andes, leaving only a few islands protruding from the watery desert, islands that can still be recognised today by the traces of former human settlements.

The surveyed shore mark begins in the department of Puno in Peru on the shores of Lake Titicaca and its islands, then sinks evenly and in a straight line to the south, runs *one metre below the upper edge of the pier of the northern port of Tihuanaku* and continues to sink inexorably, until, in the first third of the course of the Desaguadero, it intersects the elongated imaginary mirror plane of Lake Titicaca, and from then on continues its descent in a straight line *under* the elongated mirror of Lake Titicaca. You can see that it roughly follows the slope angle of the Desaguadero, but descends somewhat more steeply, i.e. that the former lake was just as "sloping" as the Desaguadero is today, with the only difference that the latter lets its waters flow down into the valley, which the lake of the past could not have done. Above the Poopo, the Coipasa and the Uyuni, the sloping shoreline approaches the mirrors of these lagoons, so that the lake roughly reached its end in these areas and was at most connected to other lakes by a river-like watercourse or a narrow passage.

The levelled shoreline therefore actually *slopes from north to south*, and since November 1926 there has been no getting around this fact, nor the other fact that the Andean metropolis of Tihuanaku lies *on this sloping shoreline that slopes southwards.* The sloping shoreline forms the perfect boundary of an equally "sloping" lake of prehistoric times and not the boundaries of different lakes with different heights. The ancient city between the Andes *therefore already existed when the lake was not yet sloping,* or in other words, even before any events took place.

which changed the equilibrium of the water quantities on the Altiplano.

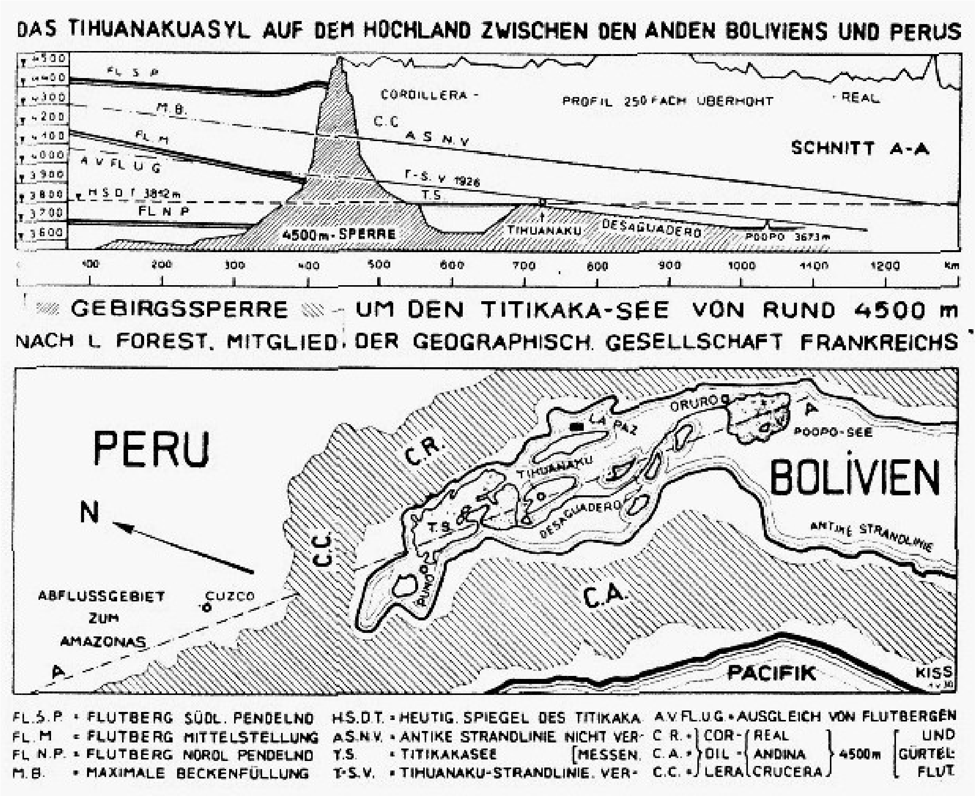
Of course, the intended experiment fails again here if one tries to fill this lake basin with the sloping boundary with water. Once again, the attempt to make Tihuanaku's harbour facilities usable for shipping would have failed.

And yet, for thousands of years, large ships probably unloaded valuable and heavy cargo at Tihuanaku's piers and travelled to distant shores with the city's produce. Tihuanaku probably owed its wealth to its shipping industry, because the people of Tihuanaku were certainly not poor! This is clearly demonstrated by the splendid luxury buildings that will be discussed below, monumental buildings that have nothing to do with today's functional buildings, apart perhaps from the Akapana hill fort, which at least served to protect the city against enemies, i.e. served a purpose.

However, the water of the inclined lake did not drain away back then, as it would today if the ancient basin could be refilled.

Professor Posnansky in La Paz, along with Falb, Uhle, Stuebel and Nestler probably the best expert on the Altiplano, is of the opinion that an ice age receding from the tropics caused the continent of South America to tilt, in that the ice masses melting later in the south than in the north exerted pressure on the countries below, so that South America sank in the south, but rose in the north, freed from the burden of ice.

It is true that Tihuanaku near the tropics was once buried under ice, just as it must have been under water for a long time. According to Posnansky, the Old Temple (Fig. 13 and 14) of Tihuanaku is - presumably - under glacial sediment. It is certain that Tihuanaku was once completely under water. The large steps of the Kalasasaya solar station in Tihuanaku are covered with a thin layer of lime deposited in the water, which adheres so firmly that you have to scrape it off with a knife to take a sample home for testing. This thin limestone is very reminiscent of the limestone shorelines, which are similarly inseparably cemented to the underlying rock, only much thicker than on the Kalasasaya steps. Posnansky is therefore of the opinion that the large Andean lake, which was enclosed within the inclined beach line, the inland sea of Tihuana- ku, either suddenly or slowly subsided, tilting southwards


DAS TIHUANAKUASYL AUF DEM HOCHLAND ZWISCHEN DEN ANDEN BOLIVIENS UND PERUS
4500
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C.C
A S N.V
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T.S.
PROFIL 250 FACH UBERHOHT
· REAL
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4500m - SPERRE
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100
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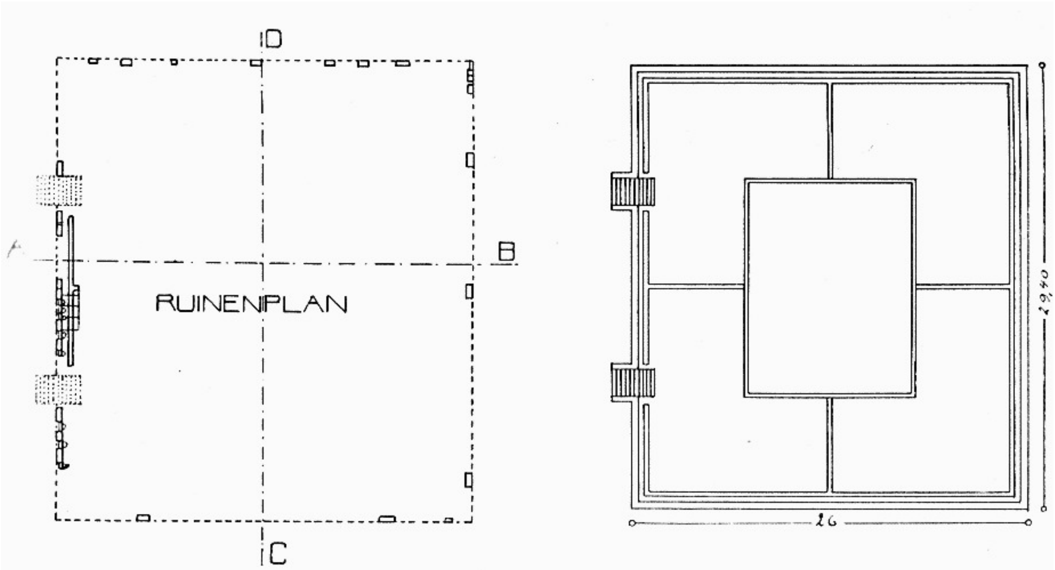
PERU
N
ABFLUSSGEBIET ZUM AMAZONAS
CUZCO
A
C.C.
C.R.
T.S.
PUNO
TIHUANAKU
LA PAZ
DESAGUADERO
ORURO
A
POOPO-SEE
BOLIVIEN
ANTIKE STRANDLINIE
C.A.
PACIFIK
KISS
FL.S.P. = FLUTBERG SÜDL. PENDELND
FL.M = FLUTBERG MITTELSTELLUNG
FL N.P. = FLUTBERG NORDL PENDELND
M.B. = MAXIMALE BECKENFÜLLUNG
H.S.D.T. = HEUTIG. SPIEGEL DES TITIKAKA
A.S.N.V. = ANTIKE STRANDLINIE NICHT VER- [MESSEN.
T.S. = TITIKAKASEE
T-S.V. = TIHUANAKU-STRANDLINIE. VER-
A.V.FL.U.G. = AUSGLEICH VON FLUTBERGEN UND GÜRTEL-FLUT
C.R. = CORDILLERA REAL
C.A. = CORDILLERA ANDINA
C.C. = CORDILLERA CRUCERA
4500m

Fig. 12: The mountain wall of the Andes around the lake area of the Meseta with drawn beach lines, a graphic representation of the "Tihuanaku Asylum" surrounded by a mountain wall.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26
29,40

Fig. 13 Plan of the ruins and reconstruction of the old temple in Tihuanaku, which was built into the earth to protect it against earthquakes.

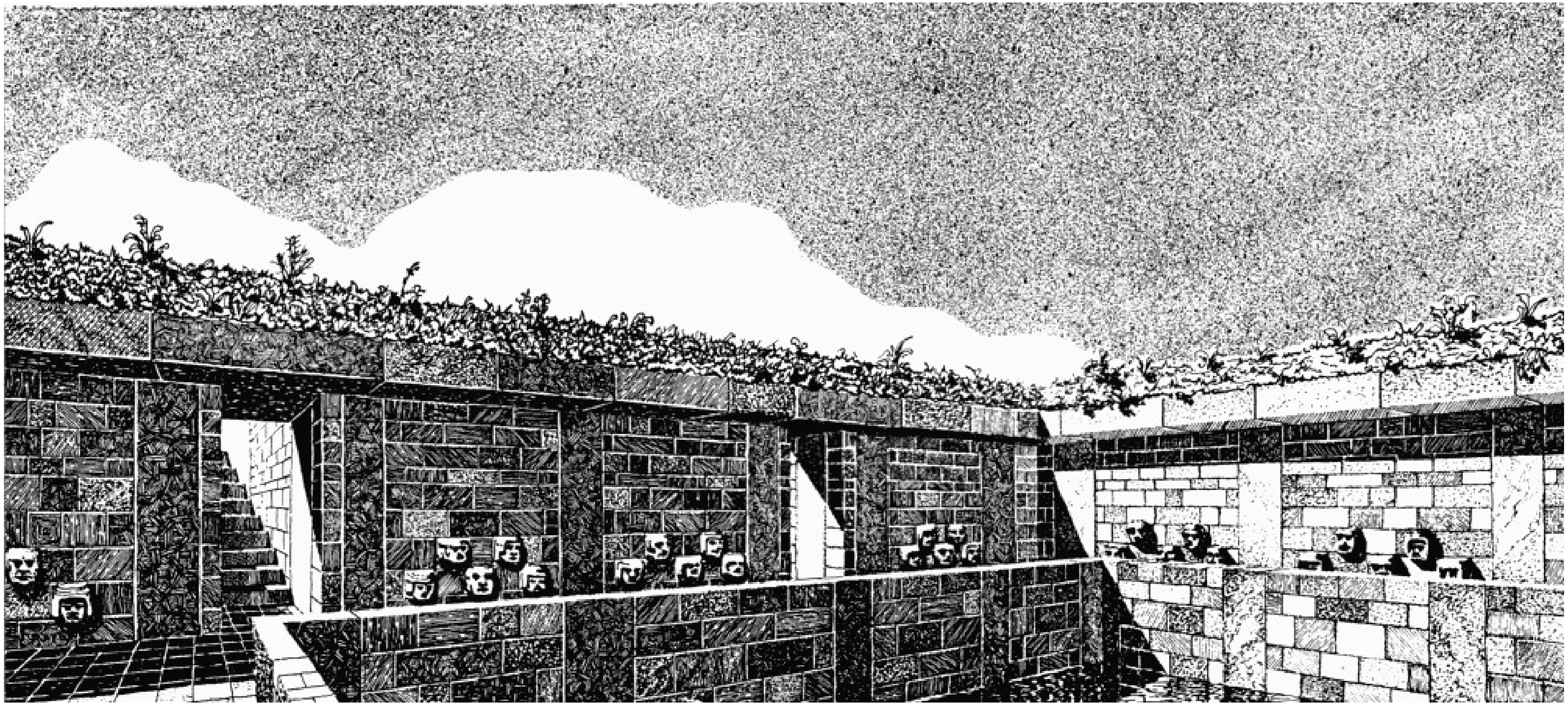


Fig. 14: The Old Temple in Tihuanaku with the peculiar frieze of portrait heads just above the floor. Reconstruction diagram.

and tilted, and on this occasion a large part of its water content leaked to the south and south-west. As a result of the earthquake, the barriers of higher freshwater lakes broke, spilling their waters into the inland sea and disrupting Tihuanaku with a tidal wave.

This assumption is probable and also corresponds to appearances, as the Andean metropolis was destroyed by a sudden event, probably by a tidal wave, and its construction was abruptly interrupted. The bones of humans and animals, including animal species that are now extinct, lie in a desolate jumble for miles in the alluvia of Tihuanaku. This bone sediment has a thickness of around 3.50 metres at one point that is accessible to observation. This site is located near the ruins of Tihuanaku. The railway runs through a hollow path here, and this has a wall height of 3.50 m without the bone sediment being penetrated. Under the rails there is still the same eerie sediment of a white-grey colour, composed of millions and millions of larger and smaller bones, fragments of painted and glazed pottery, pieces of bronze jewellery, sometimes gold and silver, malachite beads and much more. The catastrophic suddenness with which the construction work on the city was interrupted is demonstrated by the finds of silver and copper masonry solders that were left lying next to buildings that had been started, the finds of neatly lined up blocks of house stone with brand new sculpture, which were probably to be moved in the next few days, but have now remained standing to this day and will no longer reach their destination (Fig. 15).

One could be satisfied with Professor Posnansky's interpretation, as difficult as it is to believe in the tilting of a giant continent or in an uplift or subsidence, movements in which the shoreline of the prehistoric lake remained straight as a string. At best, a tilting of the total mass could come into question, but not a rising in the north and sinking in the south, since with such purely vertical movements the shoreline would have to have had an offset jump. Technical intuition is reluctant to accept tilting of a continental shelf to this extent, especially as tilting alone is not enough, but because of the very significant climatic changes, uplift and subsidence along with the direction of the gradient also occur.

The dense coexistence of glacial traces and signs of a tropical climate in one and the same place is astonishing precisely because these are areas that lie almost below the same level. Therefore, if the Old Temple of Tihuanaku (Fig. 13 and 14), which is built into the earth, actually had to endure a glacial period, which would have to be verified by a geologist, then the temple was already built and present before this period. Even from an ac- tualistic point of view, this leads to age figures that cannot even be approximated, as it is not yet possible to date an ice age in the tropics.

A new question mark is aligned with all of this, which has not yet been recognised because it is written blurred and dull further up in the cordilleras on the walls of gneiss and granite.

A second strandline lies above the first, labelled Y in Figs. 8 and 11. The second strandline, labelled Z in Figs. 8 and 11, also runs diagonally, falling from north to south. More is not yet known about it because it has not yet been surveyed, like the first shoreline labelled Y. At the edge of the uppermost beach line Z there are loose pile shells in great abundance in several places, so that one could load them up with shovels. The Indians burn a highly sought-after and well-paid bricklayer's lime from these shells in the lime-poor country.

It is not known at what angle of inclination the upper beach line runs, as it has not yet been surveyed. However, it can be assumed that it slopes even steeper to the south than the lower beach line labelled Y. In order to explain this second, upper strandline with the means of actualistic science, the assumption of a tilting and sinking of the continent is of no use either, since for the first strandline Y the continental shelf had to rise once (*ice age*), then sink (*warm climate of Tihuanaku*), then tilt (*water runoff*), rise again (*today's harsh mountain climate*) and adjust horizontally (*today's level of the lakes*). And this must have happened repeatedly in roughly the same sequence, as Posnansky claims to have recognised several ice ages and several periods of warm climate.

The upper strandline labelled Z in Figs. 8 and 11 now ends in Argentina and Chile in the *void*. It is therefore a strandline that suddenly ends in the open air, as Professor Posnansky credibly assures us. In order to fill this strandline that ends in the air with water,

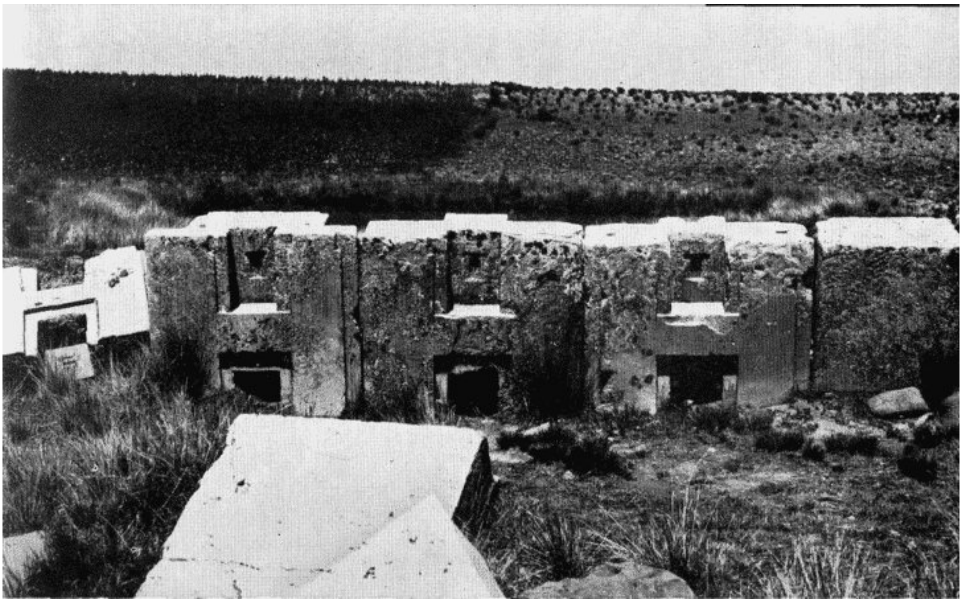


Fig. 15: Field of ruins of Puma Punku in Tihuanaku, with factory stones with ornamental decoration, ready to be moved. Construction was probably interrupted by a catastrophic flood. Phot. Professor Arthur Posnansky in La Paz.

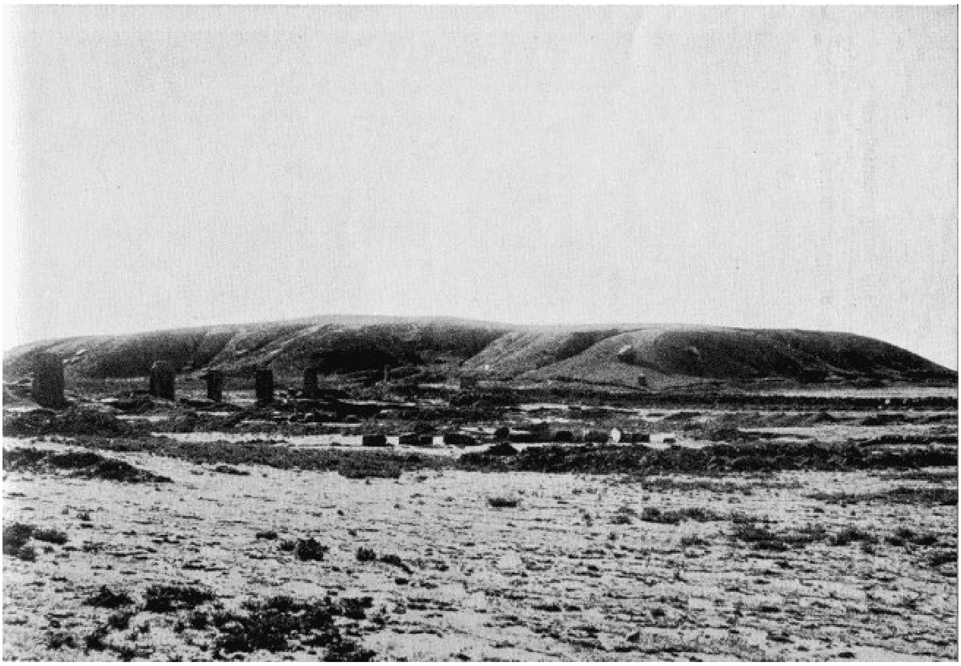


Fig. 16: The Akapana hill fortress in Tihuanaku. The fortress can be seen in the background, its ground plan, which is in the typical staircase shape, can be seen in the shadow effect. clearly recognisable. In the foreground on the left the western wall of the Kalasasaya solar observatory, on the right the Palace of Sarcophagi Phot. Professor Arthur Posnansky in La Paz.

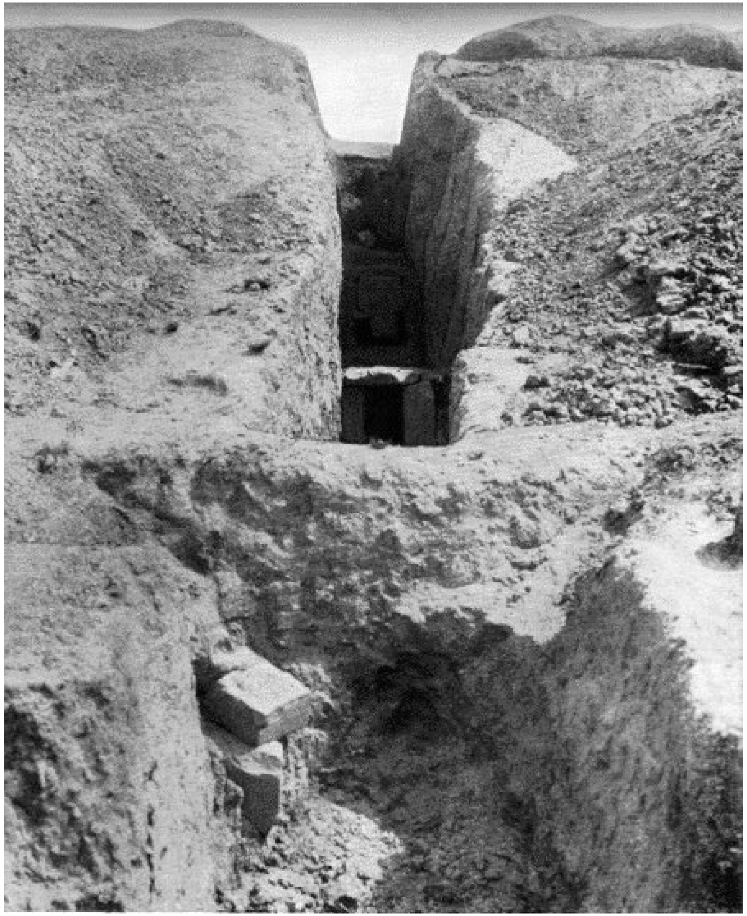


Fig. 17: The so-called Cloaca Maxima on the hill fortress of Akapana in Tihuanaku. It formed the drainage pipe of the pond on the top slab of the fortress and led down in three sections through the triple steps of the fortress to the harbour channel.
Phot. Professor Arthur Posnansky in La Paz

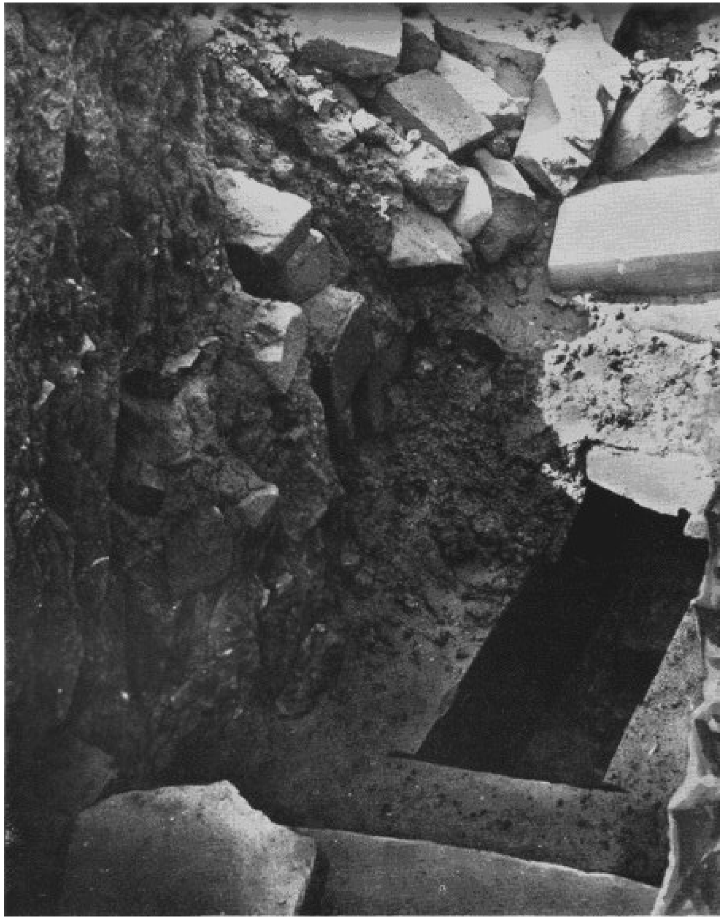


Fig. 18: The so-called Cloaca Maxima on the Akapana hill fortress in Tihuanaku. View from above into one of the three trep-shaped steps of the drainage pipe.
Phot. Professor Arthur Posnansky in La Paz.

the continent must have sunk to the level of the ocean and tipped back into a horizontal position. The continental horst of South America must have been a full 4300 metres lower to fill this strandline, and must have risen again until it reached its present elevation, but at the same time it must have tilted southwards by a certain angle. These movements in the positive and rotational sense are in addition to the others that necessarily follow from the presence of the lower Y strandline in Figs. 8 and 11 and the climatic fluctuations mentioned, so that there is a certain difficulty in following all these movements mentally. The upper strandline Z cannot be an inland sea, whether it is horizontal or not. The existence of a gap in the course of the upper strandline, namely on the Pacific coast and in the Argentine Cordillera, excludes the possibility of the existence of a horizontal or formerly horizontal inland lake, and it had to have been horizontal and closed in order not to flow out immediately.

Here the assumption of uplift and tilting, subsidence and the direction of the South American continent loses further probability due to too frequent repetitions, because in order to fill this uppermost strandline Z, the continent had to descend to sea level. Otherwise the gap is inconceivable, or else the water had to rise by around 4300 metres! The repeated climate change of the Andean highlands also requires a repeated rise and fall of the land from 0-4000 m and in between. This also seems unbelievable because of the repeated tilts and gradients and the multiple movements in the sinking right in a positive and negative sense.

The overall picture of the geology of the Andean highlands is so confused and downright puzzling that one is finally glad to know at least one fact exactly, namely that the ancient metropolis of Tihuanaku was located on the "sloping" lake of the lower strandline Y, regardless of the age of this venerable ruin site. It should therefore only be mentioned briefly that there is a third shoreline (X in Fig. 11), albeit not on the highlands between the Andes, a shoreline that clearly belongs to the other two that can be seen on the Altiplano of Bolivia. This third shoreline marker X is located on the slopes of the Pacific Cordillera on the seaward side, at the 18th parallel of the southern hemisphere, about 600 metres lower than the shoreline marked Y, which is now the middle shoreline. The presence of this

The picture becomes even more confusing with the lowest X-strandline, because it also requires the aforementioned repeated rise and fall of the continent, which, seen in fast motion, now sways and pitches, rises and falls like a ship on the high seas on its magmatic base.

Since 1926 d. Since no new theory has been published on the origin of the inclined beach lines on the highlands of the Andes, the previous assumptions of repeated uplift and subsidence of the continent as well as its repeated tilting to the south and re-direction of degrees together with changing climatic periods, alternating from almost tropical to cold climate in several repetitions, form the picture of the history of the formation of the Andes today, roughly in sketchy strokes.

In any case, the Andean metropolis with its well-known and famous Sun Gate of Tihuanaku and the Y-strand line, the ancient lake and harbour of Tihuanaku are firmly interlinked and cannot be separated, and the reader should kindly pay attention to this fact, which cannot be emphasised strongly enough, in the rest of this book. For the inseparable connection between the prehistoric city of Tihuanaku, its buildings and its Sun Gate and the inclined lake of the same name is the centrepiece of a closely linked line of reasoning, or at least an attempt to do so. The tentative dating of the inclined shoreline will provide evidence for the date of origin of just one part of the ancient city, namely the *Tihuanaku Sun Gate*, just as the Sun Gate will provide evidence for the dating of the ancient city and the origin of the inclined shoreline labelledY in Fig. 11.

Both attempts at a reciprocal proof should not be based on actualisti-
The reader is therefore invited to co-operate patiently on the basis of a working hypothesis, the experimental evaluation of which must at least be optional. The reader should therefore co-operate patiently using a working hypothesis, the tentative evaluation of which must at least be left open. The simultaneity of the emergence of both, namely the ancient city with its harbour facilities and the Sun Gate with its pictorial inscriptions together with the inclined lake, may serve as mutual support on the basis of the world ice theory, that on this much contested basis it may be possible to go further in knowledge than has been possible up to now.

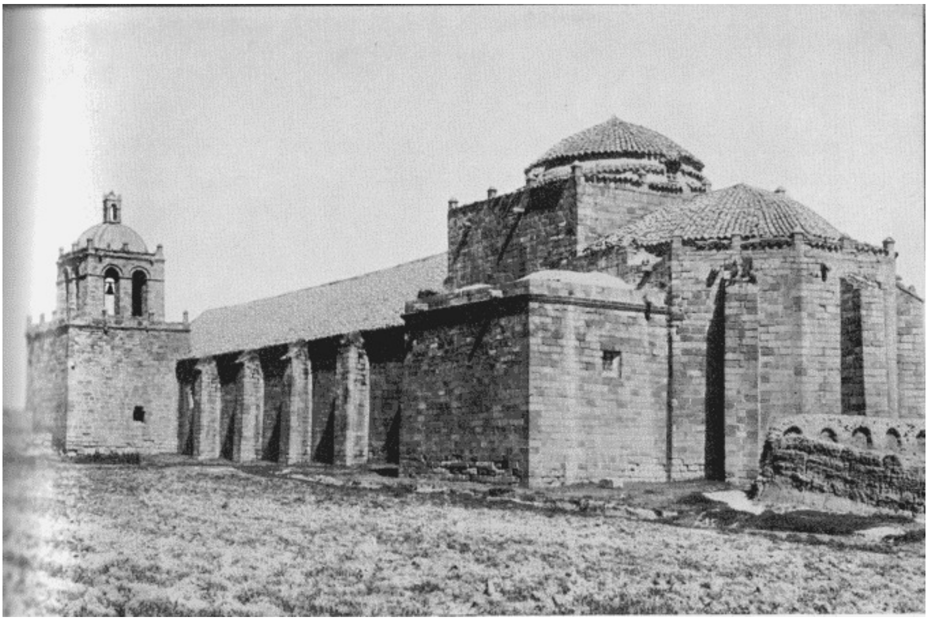


Fig. 19: The Catholic church in the modern rural town of Tihuanaku. It was built in the sixteenth century from the rubble of the ruins of ancient Tihuanaku.
Phot. Professor Arthur Posnansky in La Paz.

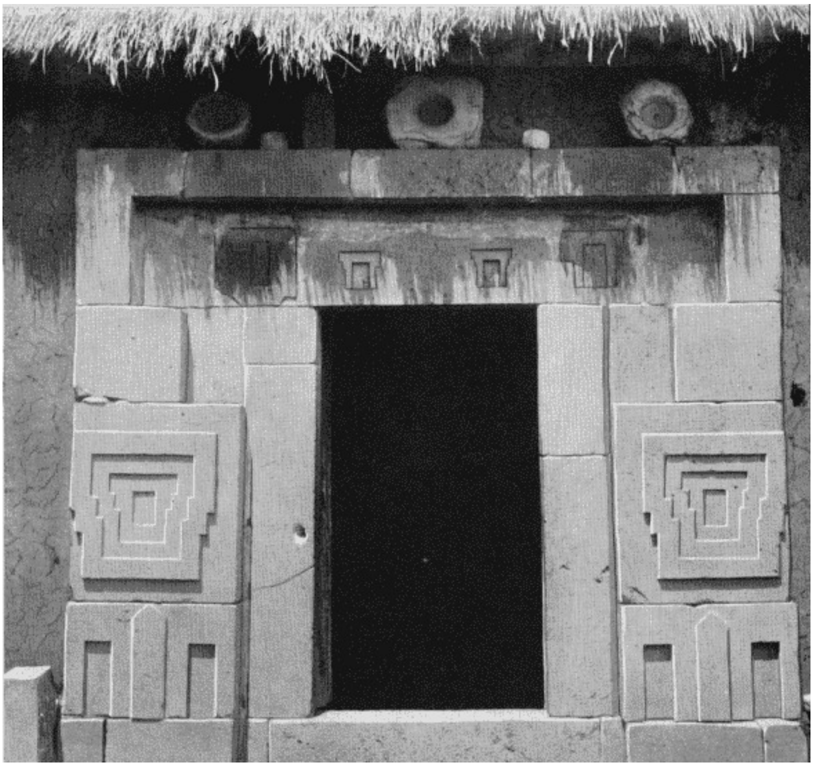


Fig. 20 Portal in the Casa del Inca, a poor estate of an Indian builder in the middle of the ruins of Tihuanaku. The portal is skilfully composed of various smooth and sculpted Kalasa- saya and Puma Punku mausoleum stones.
The ancient sculpture is very well preserved because it has lain in the clay mud of Lake Titicaca for ages, which once also flooded the old town.
Phot. Professor Arthur Posnansky in La Paz.

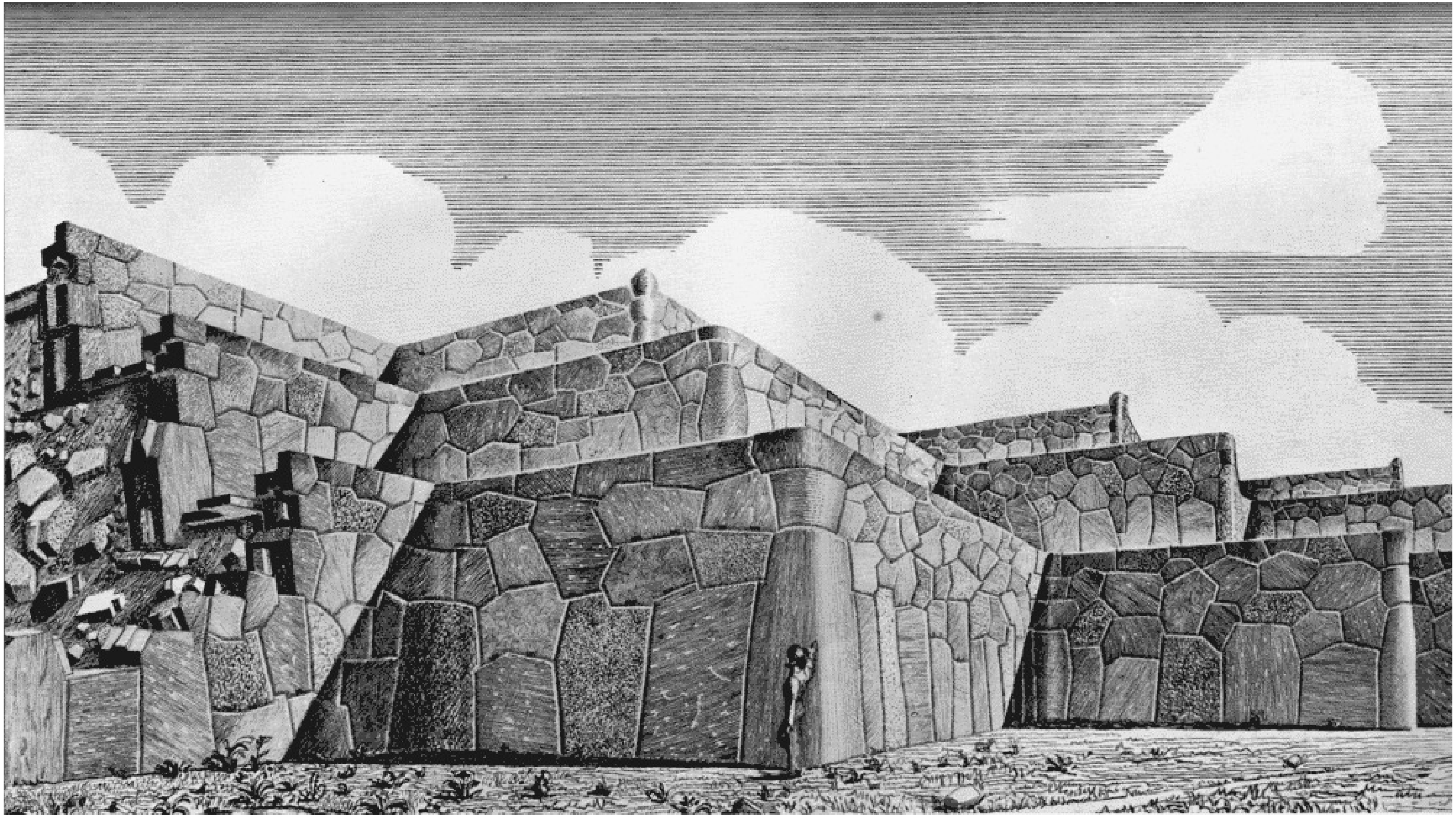


Fig. 21: The prehistoric fortress of Saxahuaman on the Rodadero near Kuzko in Peru, a triple zigzag wall of gigantic house stones. The builders are unknown. Today's condition is almost identical to the reconstruction.

As the buildings of the ancient metropolis itself display a level of culture that is astonishing given the city's great age, the following will briefly describe these buildings in order to give an impression of the culture and civilisation that existed in a city that still has the famous Sun Gate of Tihuanaku with its enigmatic inscription at its centre.

If the illustrations and drawings show reconstruction attempts alongside plans of the ruins, this is because much has already been published about the ruins of the prehistoric city of Tihuanaku, but to my knowledge no reconstruction attempts have yet been made.

Fig. 9 shows the map of the centre of Tihuanaku as reconstructed by the author on the basis of his own local measurements and those of Professor Posnansky. Other extensive parts of the city, e.g. the important necropolis and tomb complex of Puma Punku in the south-west of the city centre, are not shown in Fig. 9 because no precise overall surveys of Tihuanaku are available yet, but only exceptions of individual buildings, some of which will be shown below as plans of ruins, photographs, reconstruction attempts and diagrams.

The building labelled A on the site plan (Fig. 9) is the ground plan of Aka- pana Castle, a three-storey stepped complex of very considerable dimensions. The dimensions of the castle are about 200 by 200 m. Most of the retaining walls have collapsed or been filled in, so that the steps are only vaguely recognisable. Fig. 16, however, clearly shows the shadow effect of the staircase-like formation of the ground plan. On the eastern side of the castle, the retaining wall of Posnansky's ancient fortress was excavated. Other extensive parts of the retaining walls are presumably hidden under the rubble. However, given the large size of the complex, it will be difficult to continue the excavations, if only because of the high costs.

There used to be several buildings on the upper platform of the fortress, but only some of their foundations have been preserved. In the centre of the platform was an artificial pond or lake, which no longer exists because in the 16th century a Spanish soldier and gold digger ransacked the entire platform for gold. This probably destroyed not only the remains of the lake, but also the main remains of the buildings.

barracks, warehouses, etc. were destroyed. The large depression that exists today in the centre of the upper plateau is therefore no longer that of the pond, but the pit that the Spanish treasure digger had excavated. The former elevation of the pond, on the other hand, is precisely known, as the beginning of a drainage pipe leading out of the Akapana plateau is almost completely preserved. It leads through the three stepped terraces into the moat and harbour canal. It was probably used to drain the artificial pond, which was swollen by rain. Posnansky calls this pipe the "`Cloaca maxima`" because of its size. It is made of heavy house stone slabs and andesite blocks and is almost completely preserved due to its durable construction. The pipe was accessible. Figs. 17 and 18 show the current state during the excavation. In order to prevent the theft of the valuable stones, the conduit was filled in again after the photographs were taken. The ruins of Tihuanaku continue to offer a bewildering abundance of individual buildings whose purpose is doubtful and will probably remain so, because too much of what was there has disappeared over the millennia and been incorporated into other modern buildings. Not only are several state buildings and churches in Bolivia's capital La Paz, such as the large cathedral in the city's plaza, partly built from this conveniently prefabricated stone material from the prehistoric Andean metropolis, but almost all churches and larger buildings in the wide area around Tihuanaku contain significant parts of the huge quarry that was once a mighty city. The church of today's rural town of Tihuanaku (Fig. 19) is composed entirely of the quarry stones from the nearby ruins of Akapana and Kalasa- saya. In front of the church ring on the plaza is an open porch whose openwork outer wall is supported by 24 capitals. Other such capitals have been used in the manor houses of the Finkeros in the surrounding area as decoration for shady corridors, which offer pleasant coolness in the burning subtropical sun during the day. Most of the abundant sculptures of a figurative and ornamental nature are no longer to be found on the ruins of Tihuanaku, but have also been used to decorate manor houses. Even an Indian farmer near Tihuanaku, who calls himself Cazika and who lives in the so-called Casa del Inka, has decorated the front door of his otherwise rather meagre home with unbelievable taste.

The house was assembled from sculpted building stones (Fig. 20). He was able to fetch them from the neighbourhood with ease. In this way, the Christian Indian's door bears the pagan ornaments of a bygone era. Unlike other indigenous people living in the modern town of Tihuanaku, who have taken similar ornaments from the ruins, he refused to chisel out the un-Christian ornaments and replace them with Christian ones, as the local priest had requested. The bright Indio of the Casa del Inca proudly shows the rare visitors to his house how he has been able to build himself in the style of his "ancestors". The fact that his mulas eat from a marvellously crafted trough with chiselled staircase figures and large spiral bands naturally doesn't bother him any more than his mounts.

When you walk through the streets of the small town, you are surprised to see that they are paved with large and small slabs of different coloured stone, because in Bolivia such luxury is only common in the capital. But when your foot suddenly steps on a half-worn stone, you immediately realise where all the wealth comes from. The ruins are so close! The foundations of the houses, the portals and even the window surrounds are taken from the large, marvellous quarry, and chickens and pigs eat from water pipe channels that are smeared with clay at both ends. These stones also come from the ruins, of course.

If you walk to the railway line that passes close to the city and look at the numerous bridges that span the streams, which grow into torrents in the rainy season, you can recognise the building material of the old metropolis in its colour and structure. And if part of a valuable high relief has been incorporated, the ornaments that protrude too far have been cut off with care. If you add to this the ballast material with which the railway tracks are underlaid and which was also taken from the ruins, you can get an idea of how European civilisation has sinned against prehistoric culture.

In the finca of a high Bolivian official, the majordomo has at least recognised the purpose of the stone gutters that fill the ruins in abundance, and has built a proper and very pretty courtyard drainage system from them.

It is a miracle that there is still a stone in Tihuanaku at all.

and if the remaining blocks were not so heavy that they passively resisted removal, and if they were not so solid that they defied the pistol shots of foreign tourists, and even blasting attempts with powder and dynamite have not always led to the desired result, there would certainly be nothing left. There is no doubt that the ruins have been plundered for thousands of years by the many peoples and their masters who have played their role as guests on the Meseta between the Andes, starting with the Incas and going back to the peoples of prehistoric times when the Quechuas built their enigmatic giant walls (Fig. 21). Nevertheless, the plundering that had taken place was nothing compared to what the advancing Christianity of the Conquista had achieved in this respect. Spanish chroniclers of the first decades of the conquest still tell of towering walls that they found in Tihuanaku. Today, they no longer exist, but are hidden in the numerous Christian churches scattered throughout the country.

Thus the Kalasasaya, the spacious solar observatory of prehistoric astronomers, has also been mutilated, and yet its impressive dimensions of 135 x 118 metres are still large enough to give us an idea of what it may have looked like in the past (Figs. 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and 36). Probably

Kalasasaya is not the largest complex in the Andean metropolis (Fig. 9 labelled K), Akapana Castle is significantly larger, as is the stepped complex of the Puma Punku mausoleum, which will be discussed later, but the solar observatory with the famous Sun Gate of Tihuanaku appears to have been one of the most important complexes in the ancient city. Since the purpose of the Kalasasaya has been sufficiently clarified today, an attempt could be made to reconstruct it, even if the Puma Punku complex, for example, presented fewer difficulties from a purely architectural point of view. The Kalasasaya has been plundered except for the heavy giant pillars of its enclosing walls (Fig. 22), the east portal with its monumental open staircase (Fig. 23 and 24) and a few stones in the interior of the complex and those that still lie under the shoulders. Schult were plundered. If a valuable floor inside the building is uncovered with a spade today, you can be sure that the slabs will be stolen the next morning to serve as paving for some courtyard in the modern town of Tihuanaku.

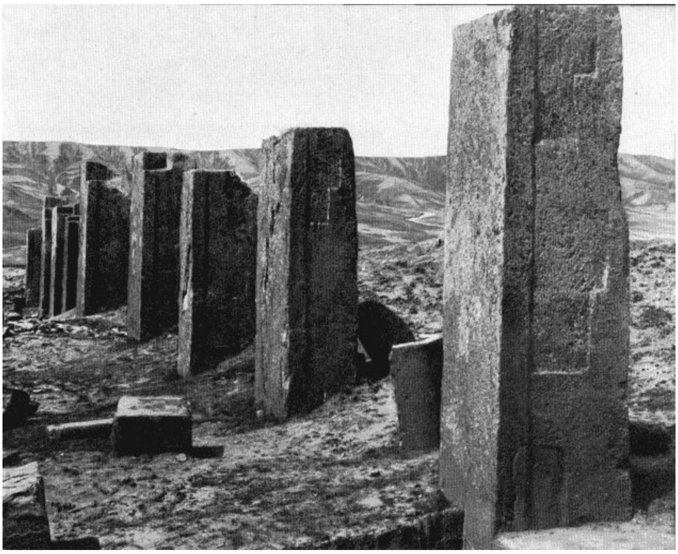
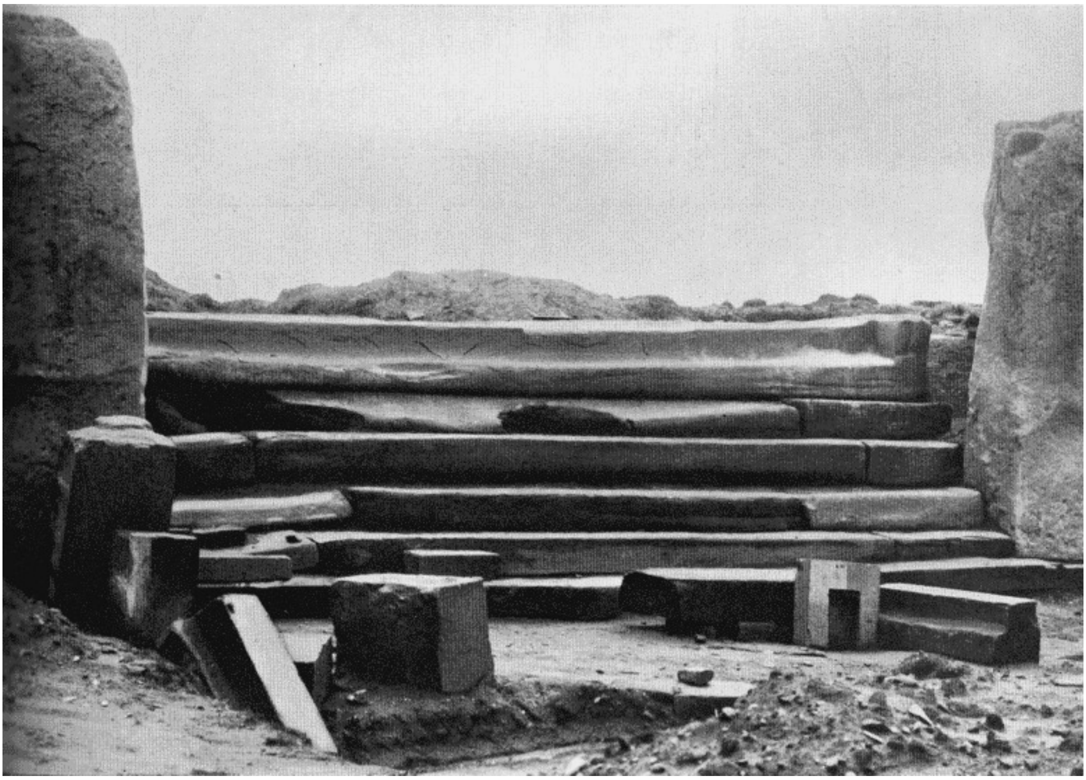
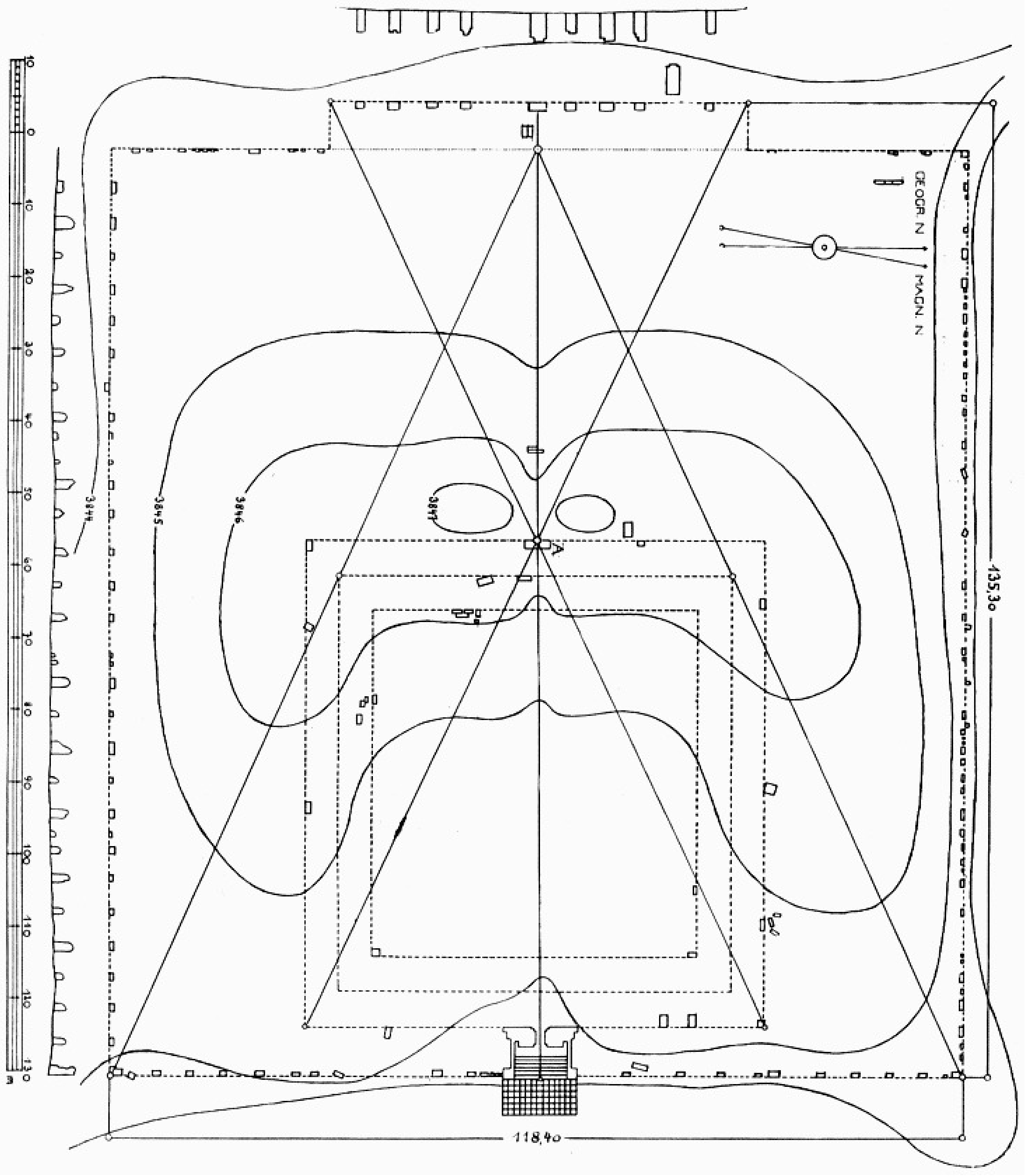


Fig. 22: The west wall of the prehistoric Kalasasaya star fort in Ti- huanaku. It is not a stone setting of individual gigantic house stone blocks, but the remains of a high wall. The walls between the giant pillars were set into these pillars with fe- ders that carried the matching grooves. The solid bond probably served as earthquake protection. There is a stone irrigation channel between the first and second pillars in the foreground. can be seen standing upright in the rubble. At the far front right, parts of the infill wall are still stuck in the ground between the pillars. Phot. Professor Arthur Posnansky in La Paz.

Fig. 23: Ruins of the east portal of the Kalasasaya in Tihuanaku with the large flight of steps, on which a layer of lime has settled in the water, a sign that the Kalasasaya stood under shallow water an unknown time ago. Phot. Professor Arthur Posnansky in La Paz.

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A
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135,30
118,40

Fig. 24: Ruins of the Kalasasaya solar observatory in Tihuanaku.

The fact that the stone robbers were unable to remove the heavy pieces is very significant in one respect, because they had to leave the most important pillars in place. For the reconstruction of the building, the great age, which Posnansky estimates at around 13,000 years, is only significant in so far as one must be careful not to go about the work with a modern building empathy. The way of thinking of the prehistoric master builders was so alien to our way of thinking that it is quite difficult to put oneself in the mind of that distant time.

The ground plan of the Kalasasaya complex has essentially been preserved and is so clear that it is accurate to the centimetre. The situation is different with the structure, about which there are fewer clues. The fortunately preserved Sun Gate shows on one side the famous figure frieze decorated with the ball scars of art-loving tourists, the importance of which will be discussed in detail in the last section of this book, and on the other side a series of large and small niches one above the other. Since the nearby cemetery and the Akapana each have a doorway, one of which continues the frieze of figures above the lintel, it can be assumed that all three portals were part of one wall, over which the frieze stretched like a long decorative band. On the other side of the wall, the niches must logically have been placed in a rhythmic sequence. As there is also a well-preserved monolithic façade model made of andesite lava near the sun gate, the design of the "sun wall" can no longer be in doubt. The sun gate stood in the centre of the wall on the surviving foundation, and it was presumably from this point that the rising and setting sun was observed (Fig. 24).

The height curves that Posnansky levelled (Fig. 24) clearly show that the sun gate and the sun wall must have stood on the highest elevation inside the building. This was also necessary for the purpose of observation.

The interior was built in the usual stepped form. Around the lowest terrace there was probably a column front with the capitals walled into the gallery of the Christian church in Tihuanaku, especially as some of these capitals are still lying around inside the kalasasaya today (Fig. 37). Since they have no dowel holes on the upper edge, it is reasonable to assume that they were covered with wood, if at all, and that the behind the portico was covered with canvas to protect it from the sun's rays. The innermost space surrounded by the columns, which Posnansky calls the sanctissimum, may have been an area of water, similar to the artificial pond on the slab of the Akapana mentioned above. There are still numerous stone channels within the construction site, and those that were dragged away must have been even more numerous, as they can be seen in various forms of use in the yards of the Indians and the landowners. Since these gutter stones had a purpose, it is reasonable to assume that they were used to supply and drain water from the interior of the Kalasasaya. A chiselled floor plan of about 2 to 3 m in size made of andesite lava, which can be seen to the east of the building in the so-called model workshop, shows this interior with several access staircases.

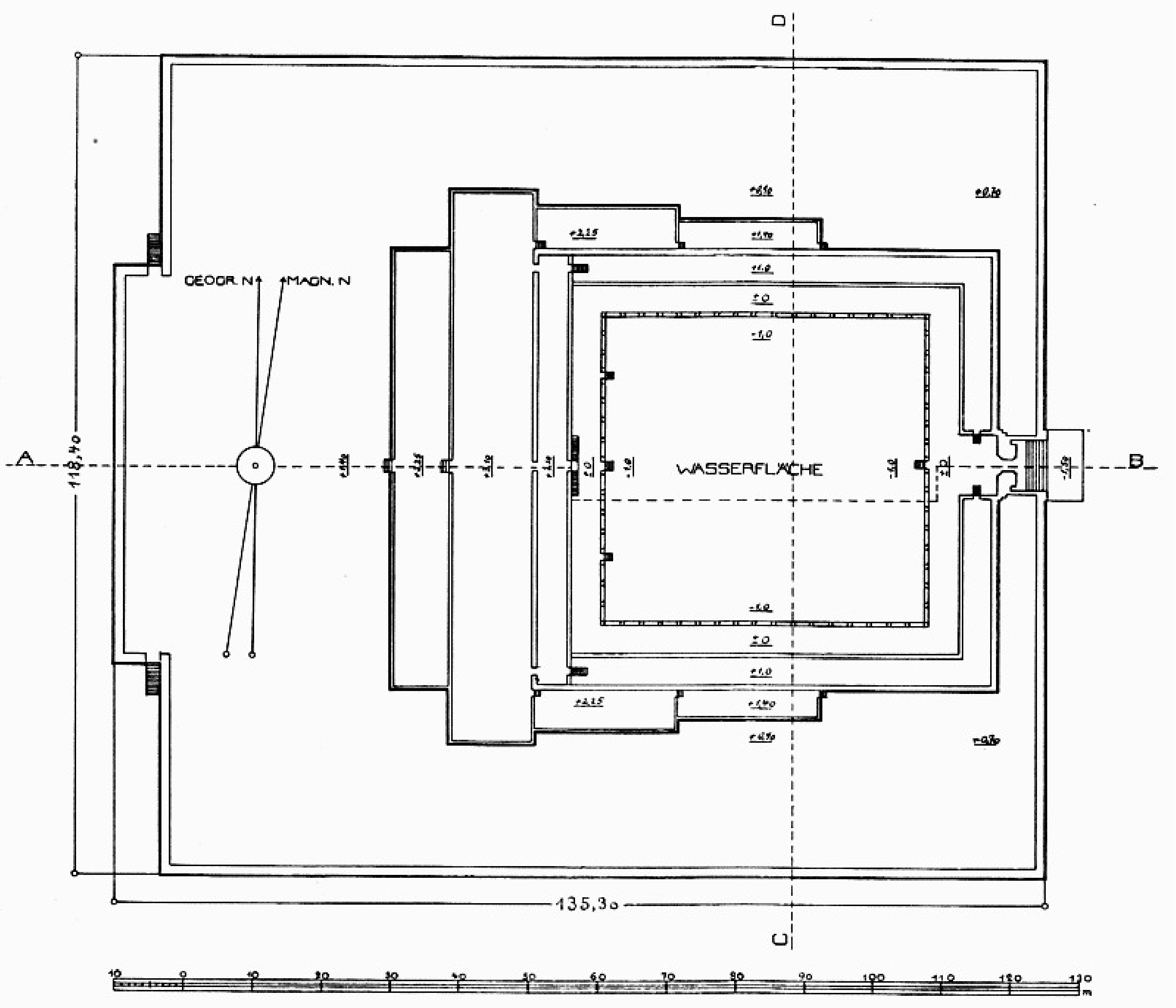
The above-mentioned model also offered the possibility of putting the reconstruction of the eastern main portal with its wide open staircase on paper (Fig. 39), as it clearly shows the widening of the space behind the portal and the staircases leading out to the right and left of the gallery. In addition, the areas of the existing ground plan slab of the east portal, on which walls had sat, show clear elevations above the surface of the otherwise more weathered stone.

Reconstructing the ground plan of the interior building in the typical bowl shape of the time is a requirement of the spirit of the prehistoric Tihuanaku epoch, but also a requirement of the altitude curves (Fig. 24), which blur this shape. These terraces would presumably be found in considerable remnants under the rubble.

The floor of the large complex was probably covered with slabs. Strangely enough, there is still a remnant in front of the eastern main portal. However, with the demand of today's population for building materials, this last remnant will also disappear, as the slabs are not particularly heavy.

The reconstruction of the Kalasasaya solar observatory gives an approximate picture of a monumental building and thus of the art and culture of a great people, because it is a building that can probably compete with the best buildings of modern times in terms of artistic taste and grandeur of architectural spirit. Figs. 24-36 show this perhaps better than words can describe.

Fig. 25 Reconstruction of the ground plan of the Kala-sasaya in Tihuanaku.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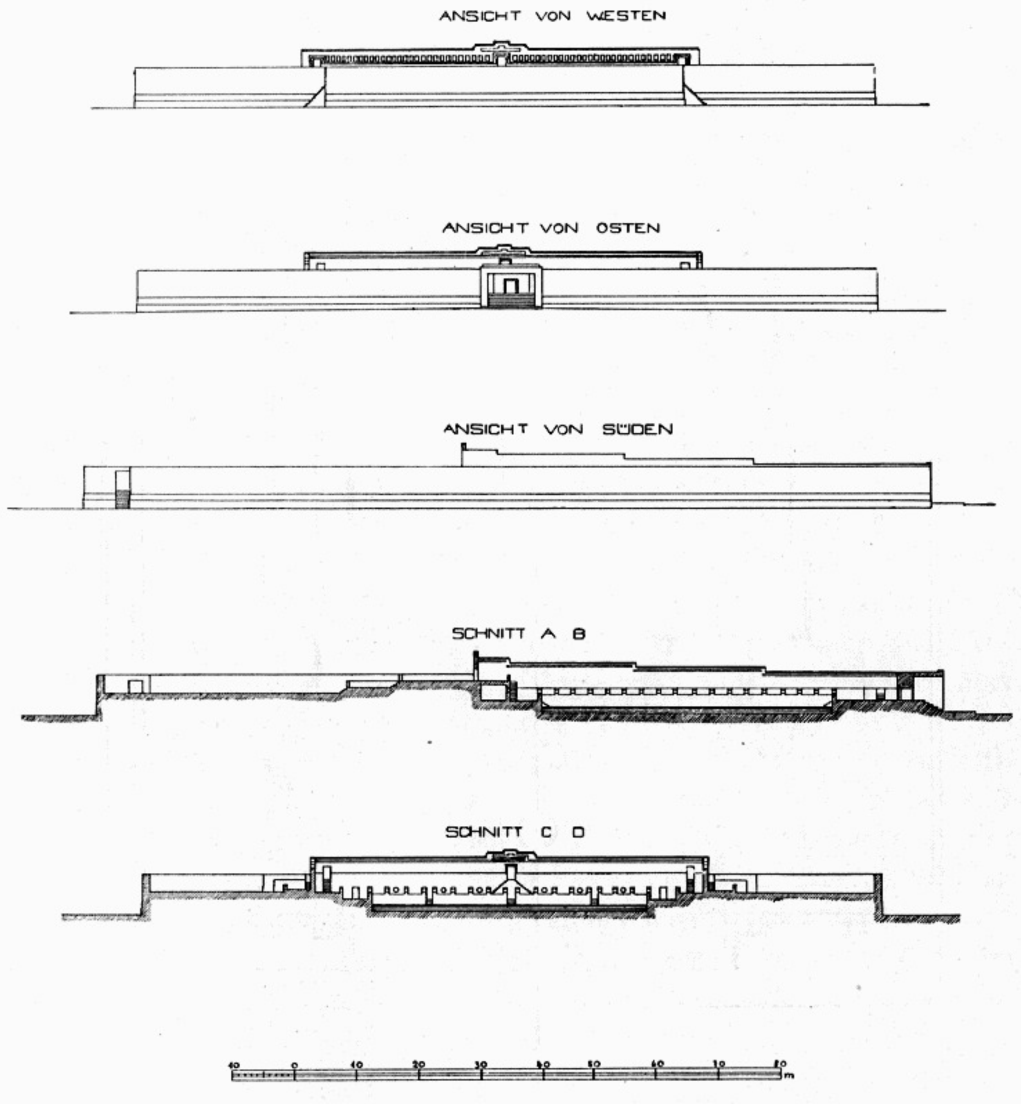
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Fig. 26 Reconstruction of the Kalasasaya solar observatory in Tihuanaku. Sections. Views.

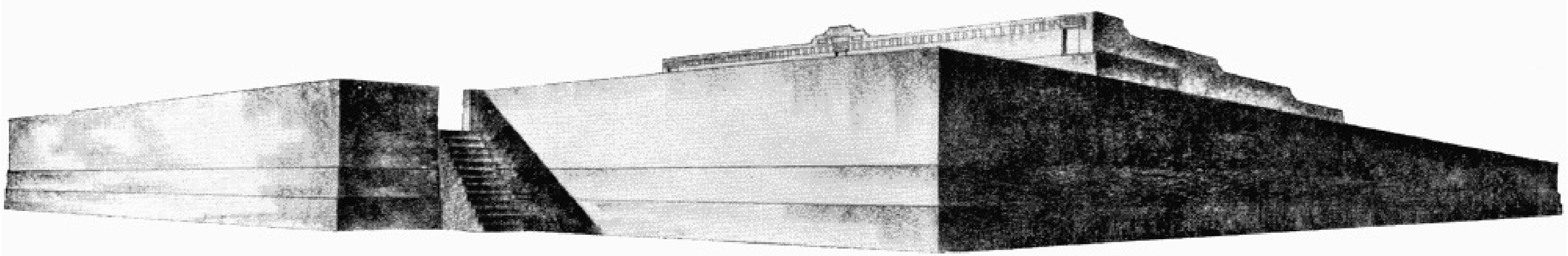


Fig. 27 Reconstruction of the Kalasasaya solar observatory in Tihuanaku. View from the south-west. Drawing by Regierungsbaurat Kleinpoppen in Essen.

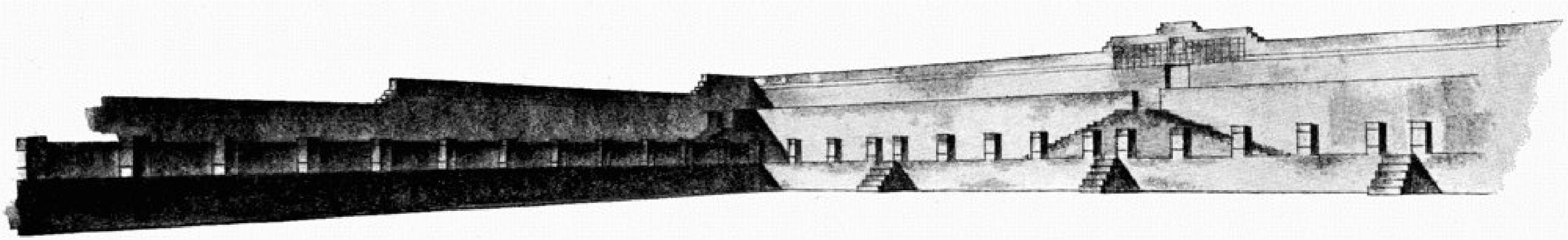


Fig. 28 Diagram of the inner courtyard of the Kalasasaya solar observatory in Tihuanaku. Drawing by government architect Kleinpoppen in Essen.

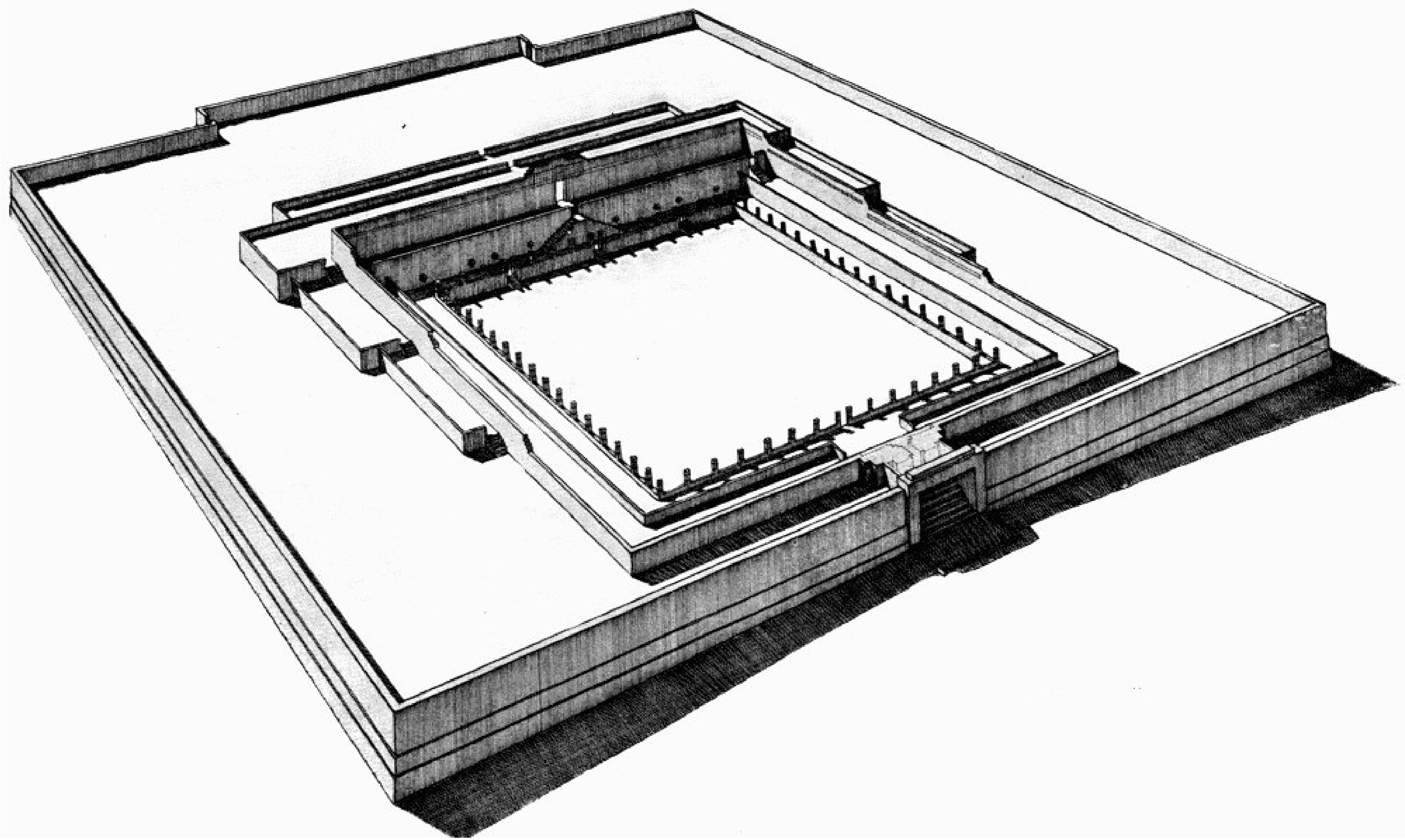


Fig. 29: Overall layout of the Kalasasaya solar observatory in Tihuanaku, seen from a bird's eye view. Reconstruction. Drawing by Regierungsbaurat Kleinpoppen in Essen.

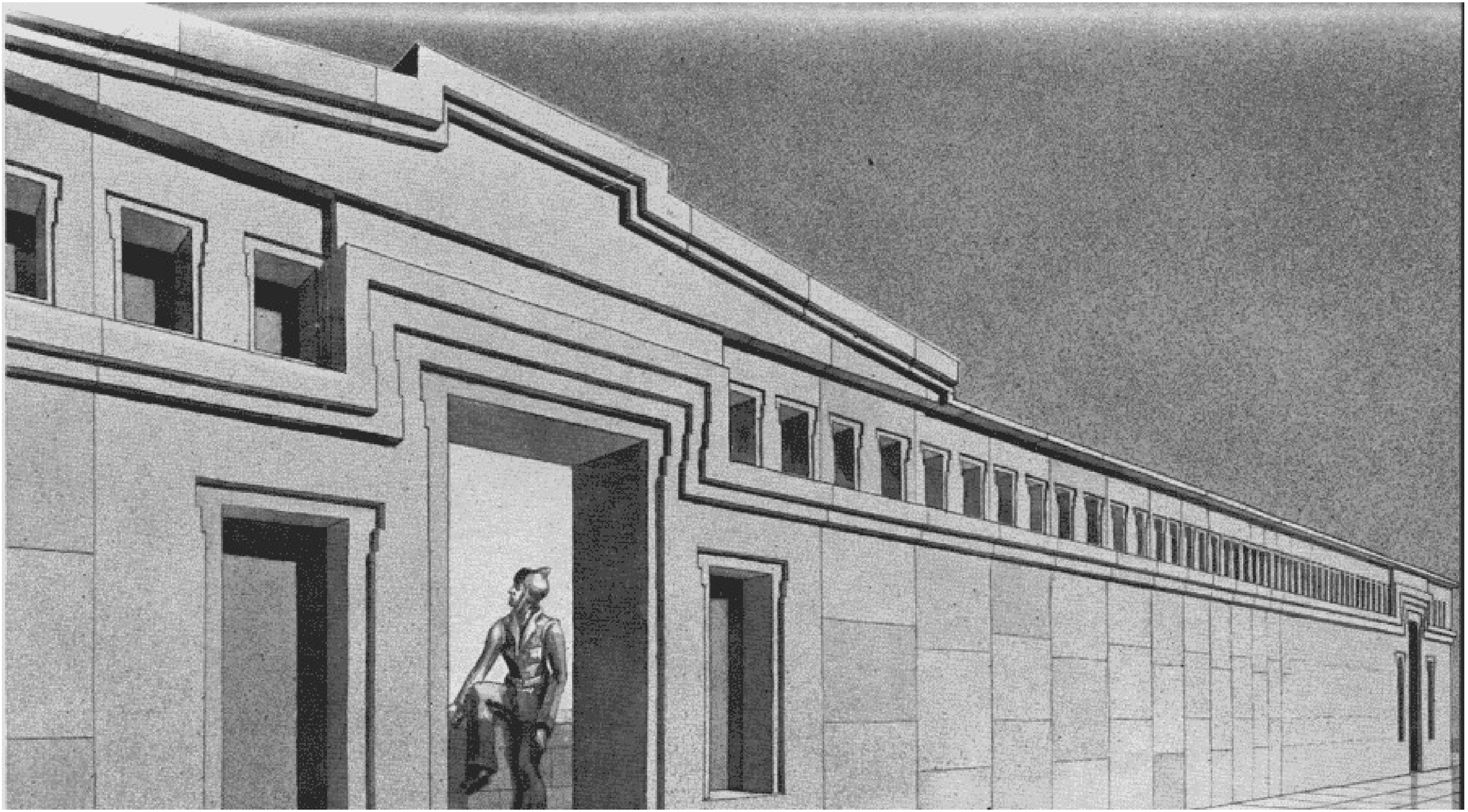


Fig. 30: Diagram of the west side of the sun wall in the Kalasasaya in Tihuanaku. Reconstruction.

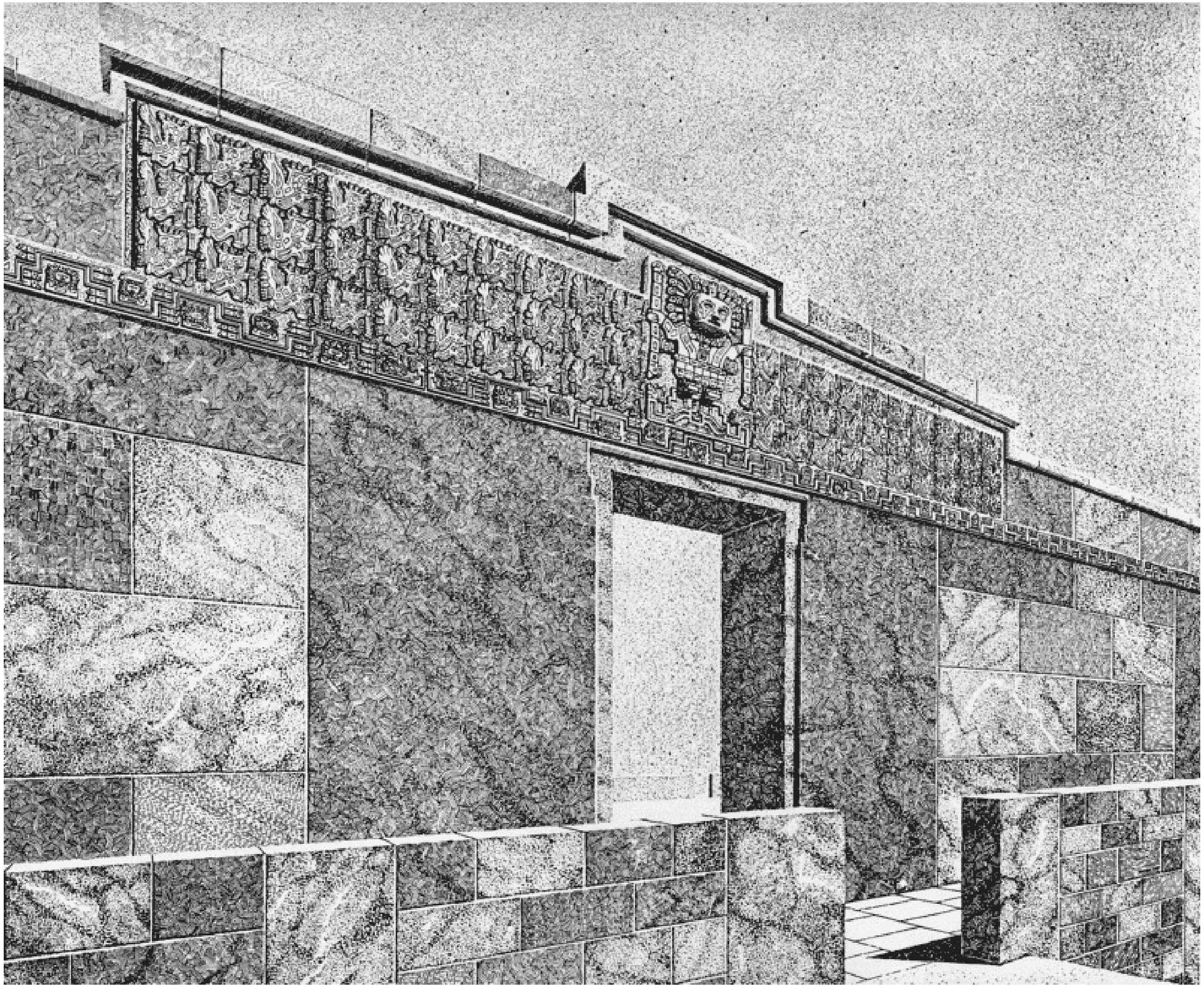


Fig. 31: Diagram of the east side of the sun wall in the Kalasasa- ya in Tihuanaku. The famous calendar frieze above the portal. Reconstruction.

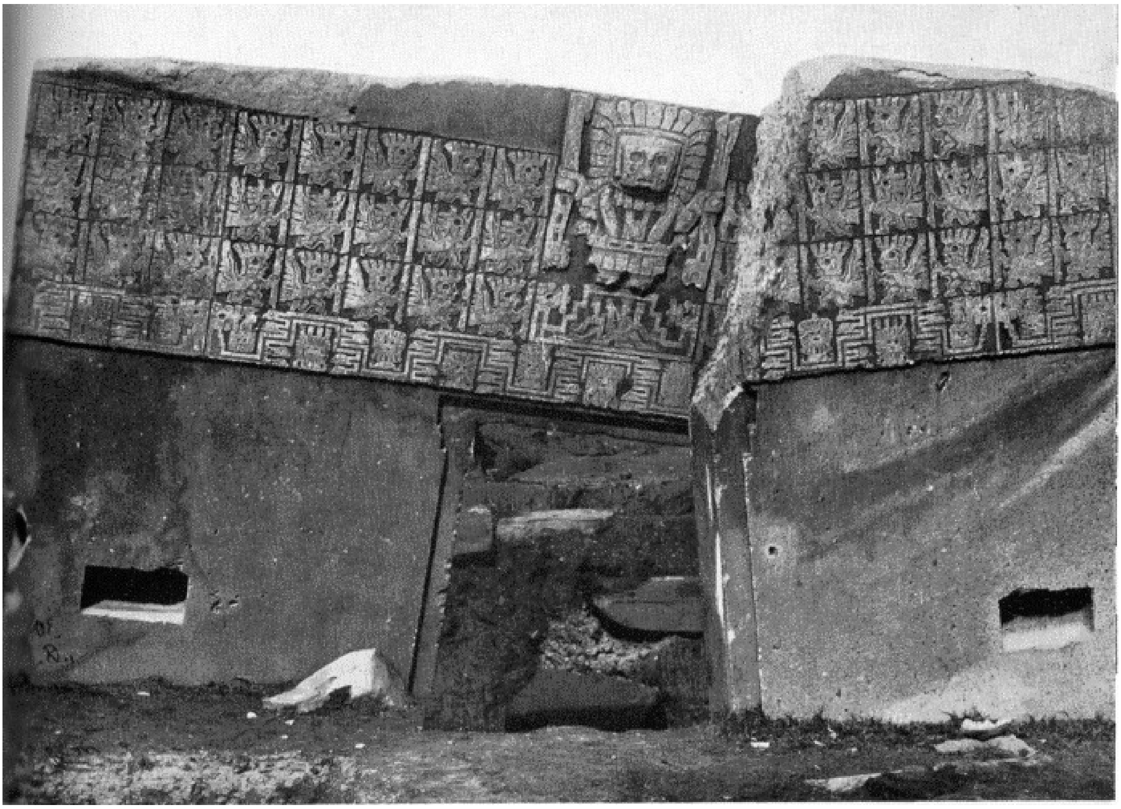


Fig.32. Photograph of the Sun Gate in Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

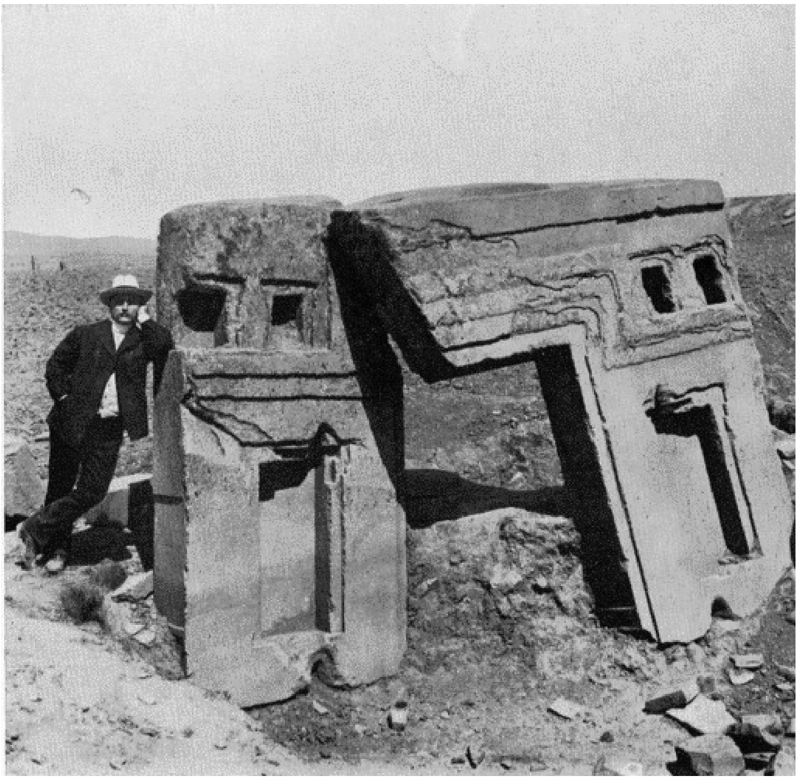


Fig. 33 Photograph of the Sun Gate of Tihuanaku, west side. Phot. Professor Arthur Posnansky in La Paz.

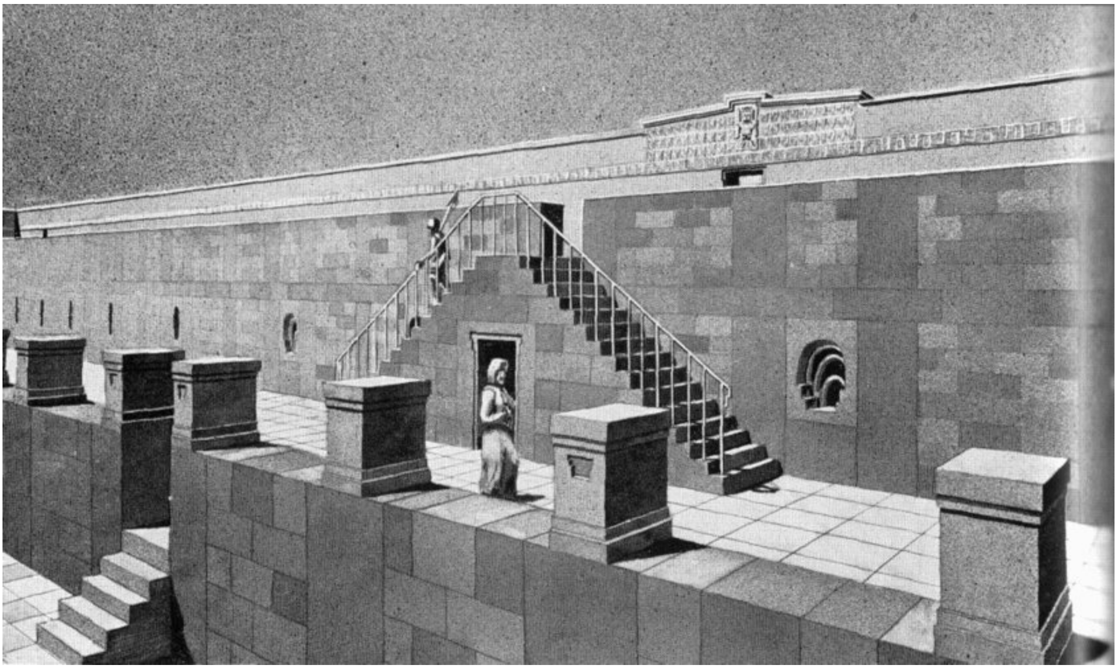


Fig. 34: Diagram inside the Kalasasaya solar observatory in Tihuanaku. Reconstruction.
The sun gate on the top landing.

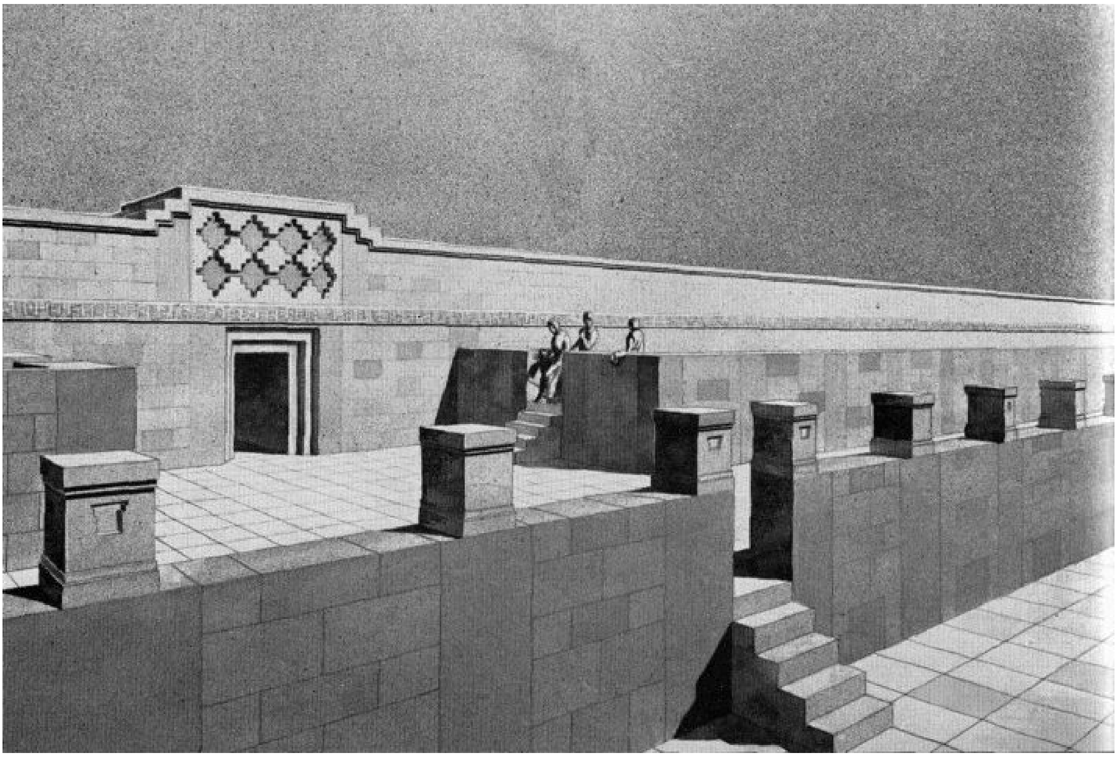


Fig. 35: Diagram of the east gate of the Kalasasaya solar observatory, seen from the inside.

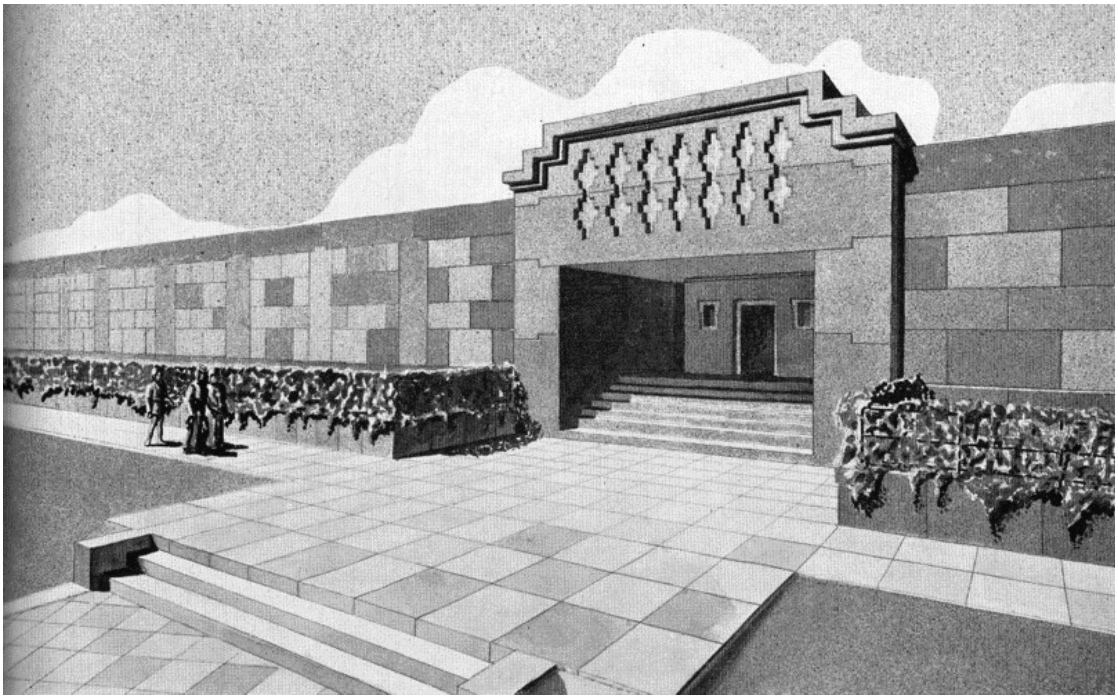


Fig. 36: Diagram of the east gate of the Kalasasaya solar observatory, seen from the outside. Reconstruction.

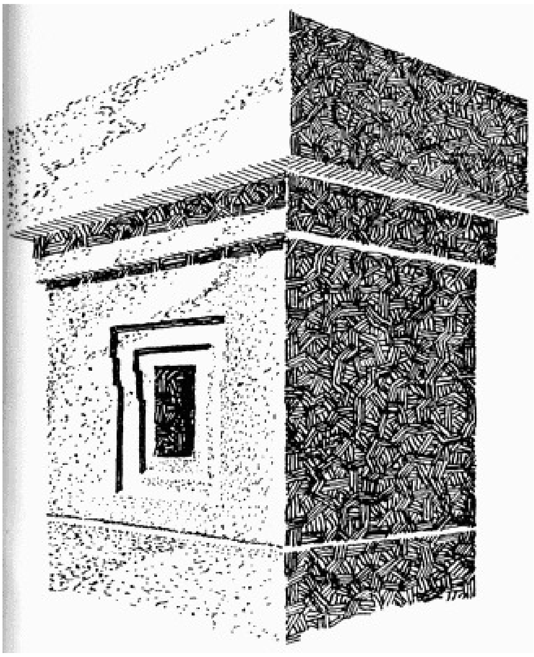


Fig. 37: Capital from the Kalasasaya in Tihuanaku.

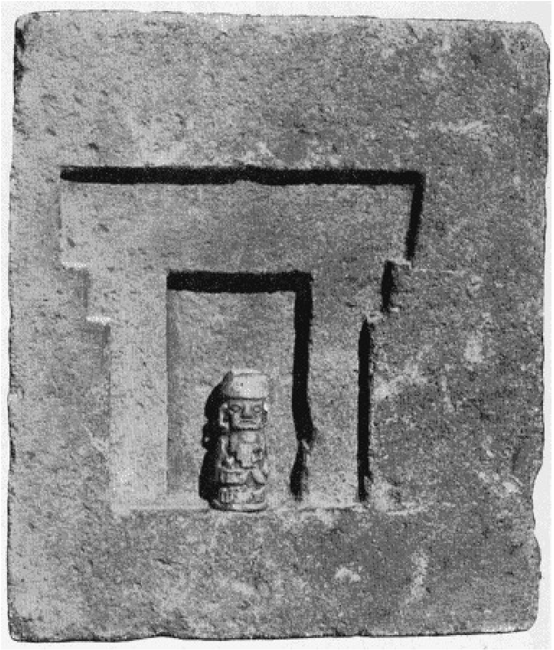
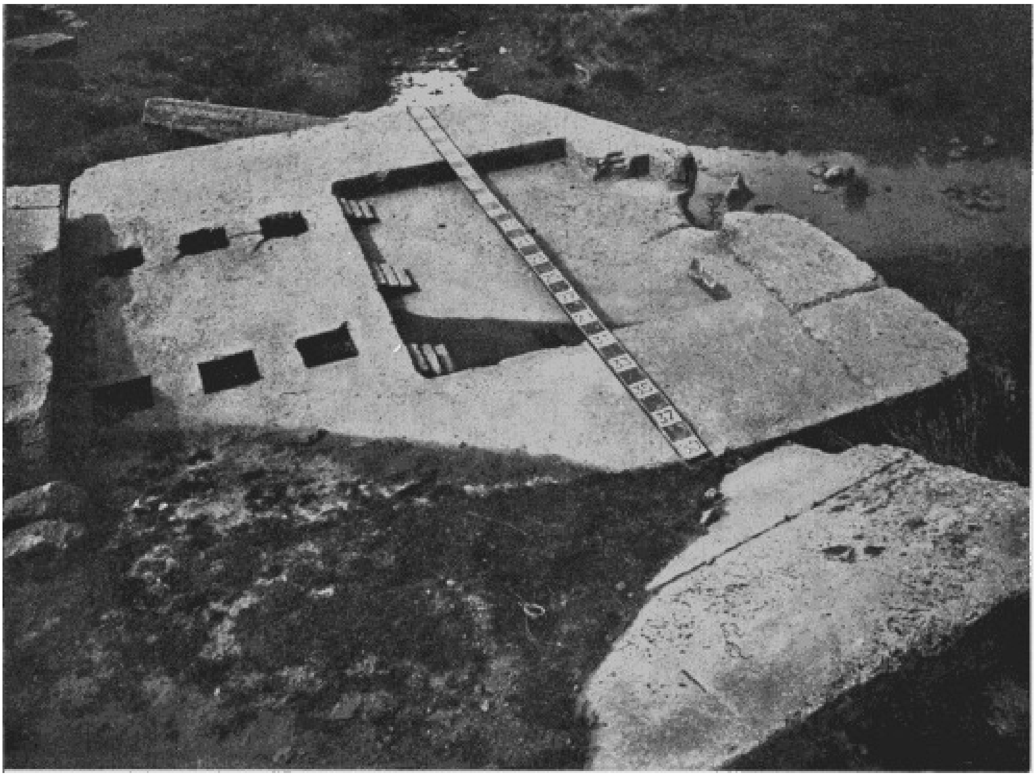


Fig. 38 Niche stone from Tihuanaku, probably from a frieze in the Kalasasaya solar observatory.



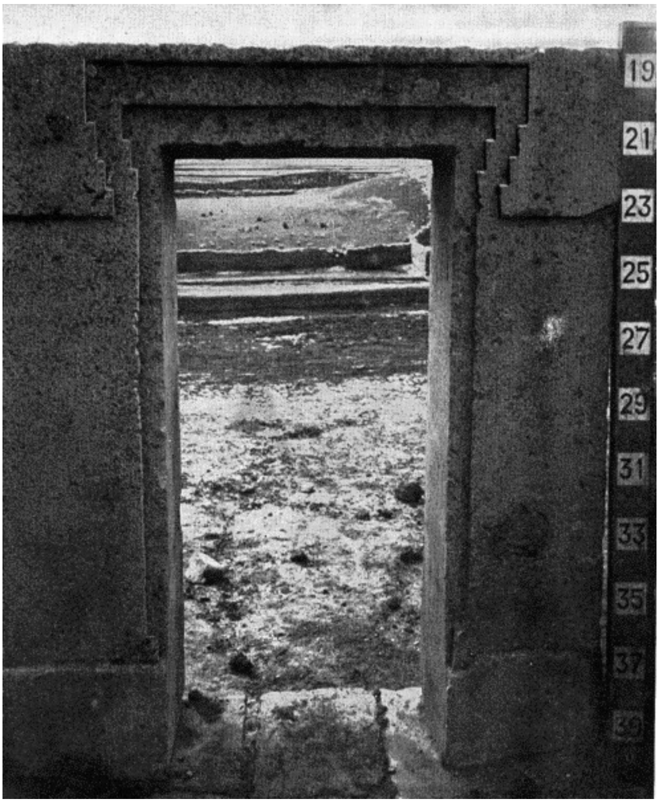


Fig. 39 Stone ground plan model of the Kalasasaya solar observatory in Tihu- anaku. The model is located in the so-called model workshop about 150 metres east of the observatory. Phot. Professor Arthur Posnansky in La Paz.

Fig. 40 Portal from Tihuanaku, presumably part of the Kalasasaya sun wall. The portal has been moved to the modern cemetery of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

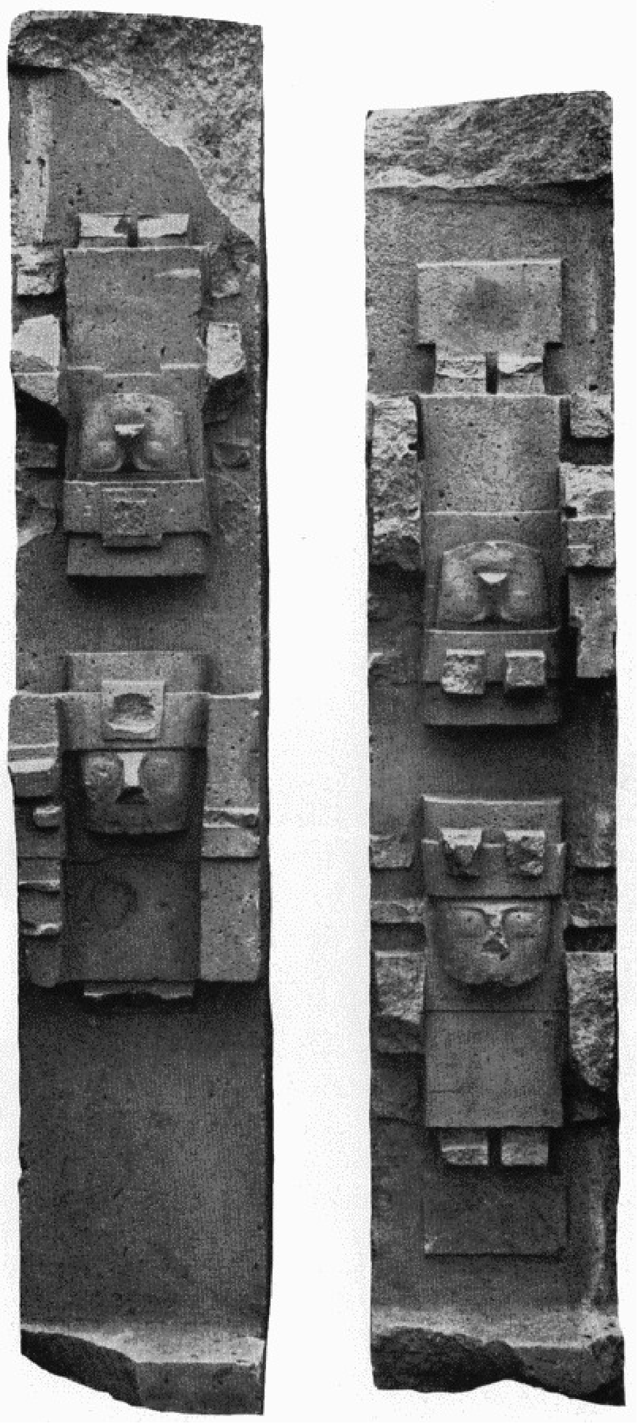


Fig. 41 Anticephalic pilasters in Tihuanaku, probably belonging to the Kalasasaya solar observatory or the Palace of Sarcophagi. Phot. Professor Arthur Posnansky in La Paz.

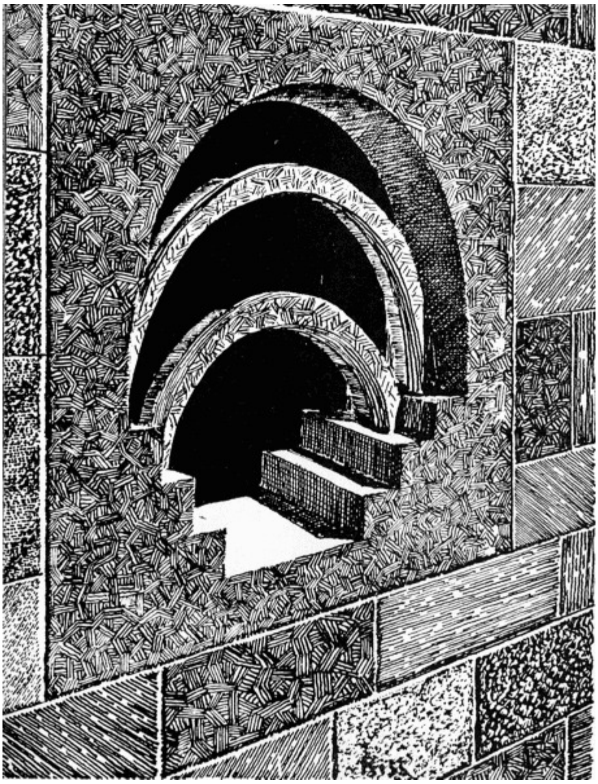
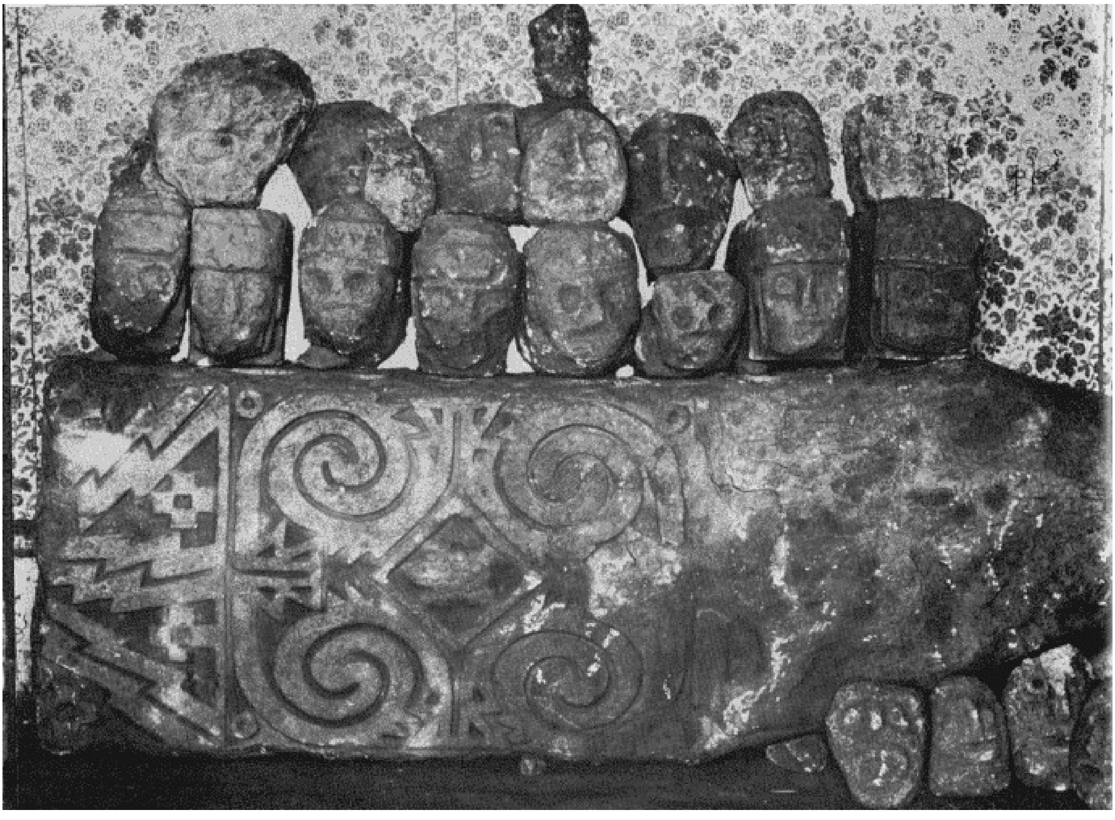


Fig. 42 Tracery window in Tihuanaku, probably from the Kalasasaya. The window and its tracery are chiselled out of a single an- desite block.

Fig. 43 Archaic portrait heads from the so-called Old Temple of Tihuanaku. The heads were embedded in double rows thirty centimetres above the floor of this temple. Phot. Professor Arthur Posnansky in La Paz.



Figs. 38, 40 and 41 show details of the architecture, while Fig. 42 illustrates how the artists of Tihuanaku created their tracery windows. The only window of this type found in the ruins is in the National Museum in La Paz. The window closure seems to have been made of a kind of glass, because in the dome of the modern church of Tihuanaku such translucent panels - perhaps alabaster - were used as window closures and have been preserved in this way.

The so-called Old Temple, which has already been mentioned repeatedly above in connection with the climate of the Meseta, appears to be one of the oldest buildings in Tihuanaku. It is labelled AT on the site plan in Fig. 9. It is built into the ground, so it never stood freely on the level, as the outer sides of the enclosing walls are in the roughest form and protrude into the ground at different levels. The inner surface of the walls, on the other hand, was flush and carried two rows of stone portrait heads, one above the other, 30 cm above the partially still existing slab floor (Fig. 14 and 43). Even if you were very small, you had to lie down on the floor to look at the stone heads. In the author's opinion, the stone heads are a gallery of ancestors. The faces of the stone images are completely different. The intention was obviously to create portraits. However, they look quite archaic (Fig. 44). In contrast, portrait heads from a later and completely different artistic epoch were almost masterly in conception and execution, as shown by the unfinished portrait of a clergyman or scholar (Fig. 45), which was excavated in the interior of the Kalasasya by Posnansky. This perfectly beautiful portrait of a man of apparently Nordic race is one of the frequent examples of the fact that the construction of Tihuanaku was probably suddenly interrupted in its last and most mature building period, as Posnansky says, by a cataclysm that swept away the metropolis of the Andes in the middle of its heyday.

Only small remains of the old temple have been preserved. The backfilled interior seems to contain a glacial deposit, as certain layers of gravel and mud indicate that the temple had been in a cold climate for a long time. The outer walls are poorly preserved up to a height of barely 1.50 metres. The reconstruction is loosely connected to the finds (Fig. 14). However, the stairway entrances were not found.

North of Kalasasaya is the northern harbour, which is shown in the reconstruction on the site plan in Fig. 9. The pier walls of the small harbour basin just north of the Kalasasaya solar observatory are still partially intact.

To the west of the Kalasasaya is another building, the so-called Palace of Sarcophagi, an arbitrary name that stems from the initially inexplicable layout of the portal building. The purpose of the building is not known, and the remains are few or have not yet been excavated. Nevertheless, the entrance could be determined with sufficient accuracy for the reconstruction. Figs. 46 and 47 show the current state in the light image, Figs. 48, 49, 50, 51 and 52 in the reconstruction. Figs. 46 and 52 show the staircase leading down to this building. It is composed of black, white and red stones and must have had a very splendid effect.

To the north of this palace of sarcophagi are the "Baths of the Incas", as they are popularly known. However, these are not baths, but underground dwellings (Fig. 53). It is hard to believe that this highly cultured people, who created buildings of the size and monumentality described above, lived in underground dwellings. But the buildings of Tihuanaku originate from several building periods, perhaps from four or more, so that a simultaneity of the underground dwellings and the monumental buildings can hardly be assumed. Nevertheless, the construction of some of these dwellings indicates a high level of skill in the treatment of stone. These dwellings were not built underground out of poverty! Some of them are so precious and made of such finely worked material that an above-ground dwelling with many large rooms could easily have been built from lesser building materials. The deeper reason for living in this way will probably be mentioned in the following section of this book. In any case, there can hardly have been climatic reasons for living so modestly, such as extreme heat or the desire to sleep in a cool place, at least at night, because one would assume that such a skilful people would have found other ways to live in a cool place if they had wanted to.

The fact that there were closed, above-ground living quarters in Tihuanaku at some point during the construction period is proven by the window already discussed (Fig. 42) and the window closures made of a glass-like, translucent mass preserved in the church of Tihuanaku. The underground dwellings are not only found in the vicinity of the Kalasasaya, but also at other sites.

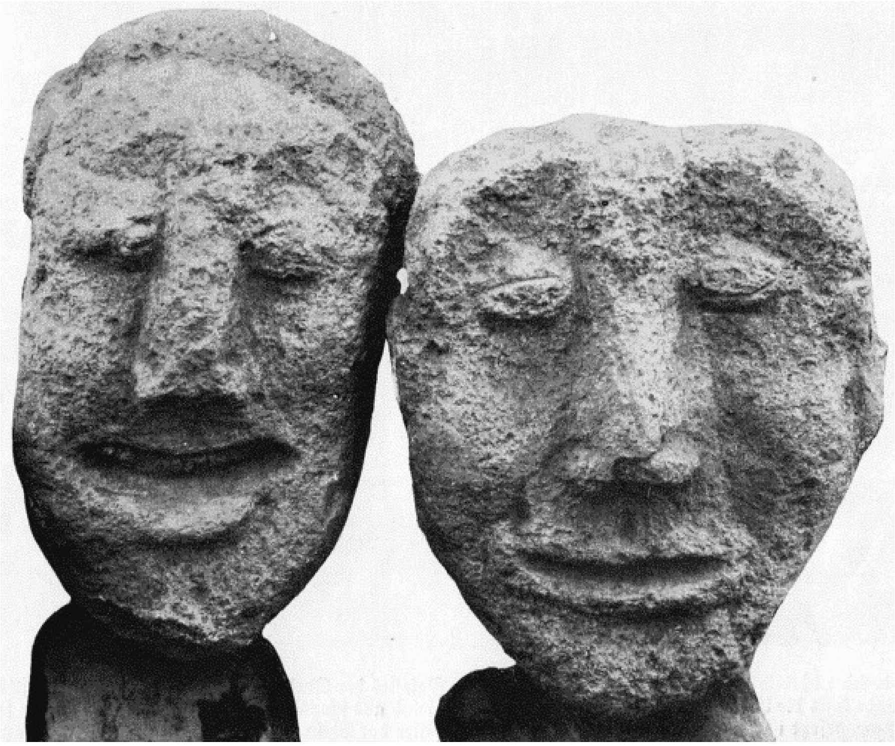


Fig. 44 Archaic portrait heads from the so-called Old Temple of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

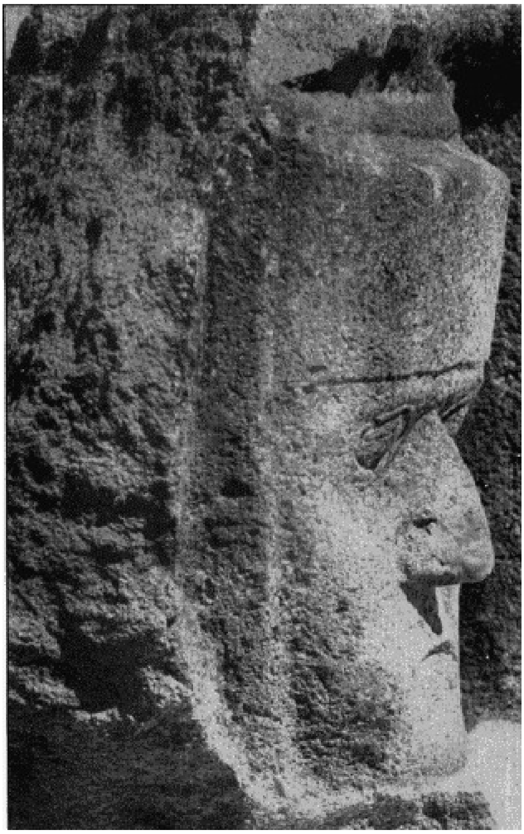


Fig. 45 Unfinished portrait head of a priest or king with unmistakably Nordic facial features, found in the interior of the Kalasasaya solar observatory in Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

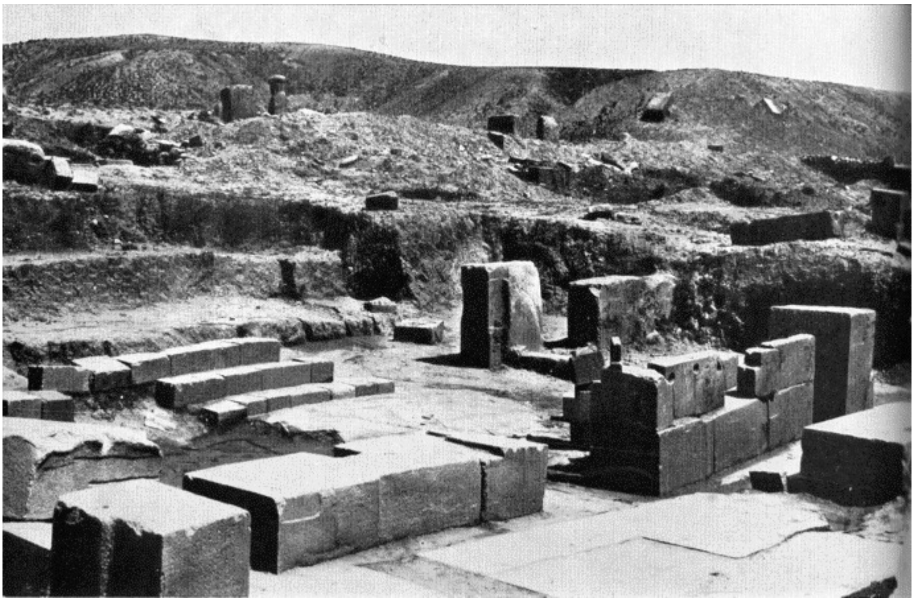
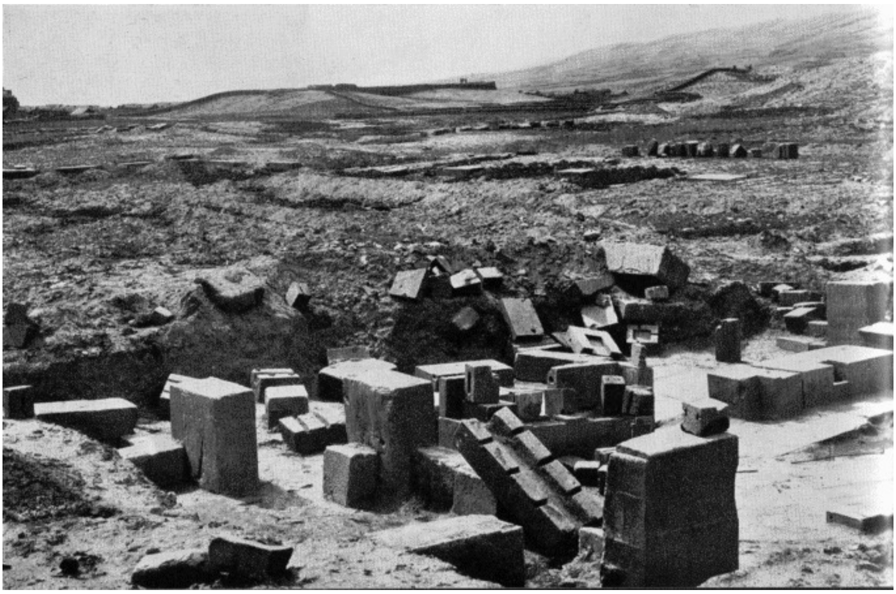


Fig. 46 Photograph of the portal ruins of the so-called Palace of Sarcophagi in Tihuanaku. In the middle round on the left the remains of the coloured staircase, which is composed alternately of black, white and red stones. In the background on the left the first pillar of the west wall of the Kalasasaya solar observatory, in the background the hill of the Akapana fortress. Phot. Professor Arthur Posnansky in La Paz.

Fig. 47 Photograph of part of the so-called Palace of Sarcophagi in Tihuana- ku. Phot. Professor Arthur Posnansky in La Paz.



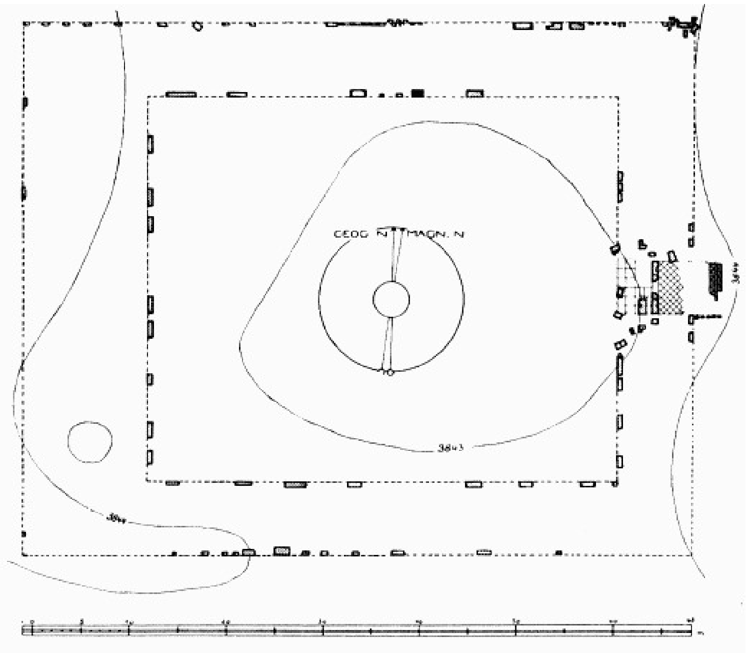

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Fig. 48 Plan of the ruins of the so-called Palace of Sarcophagi in Tihuanaku.

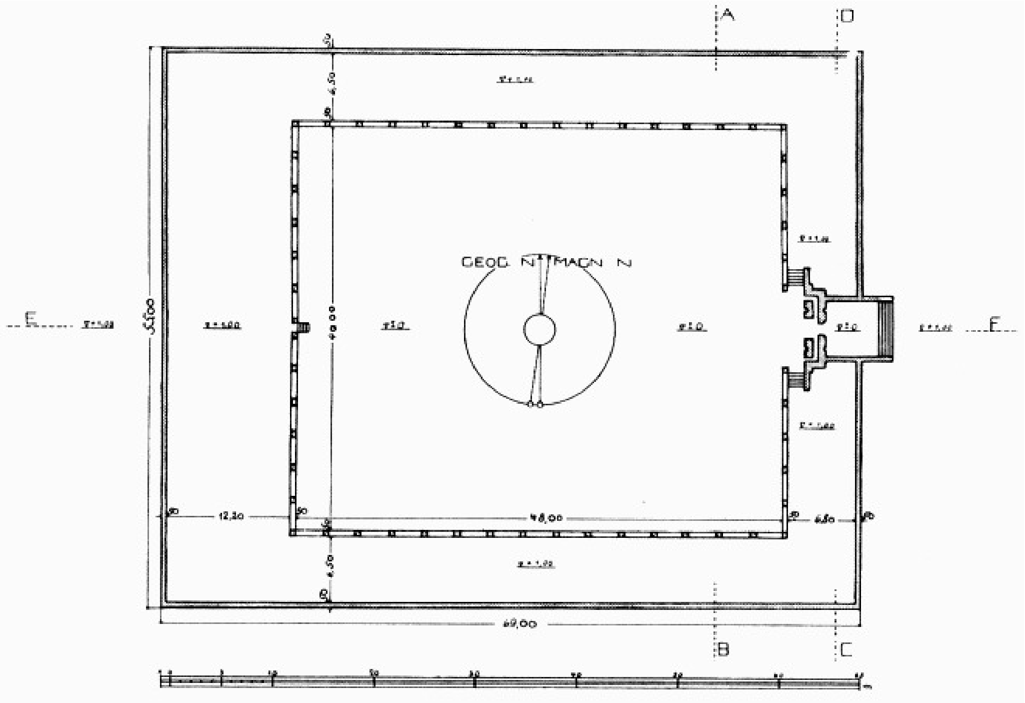

A
D
GEOG. N
MAGN. N
E
F
6,50
40,00
12,20
48,00
6,80
69,00
B
C

Fig. 49 Reconstruction of the ground plan of the so-called Palace of Sarcophagi in Tihuanaku.

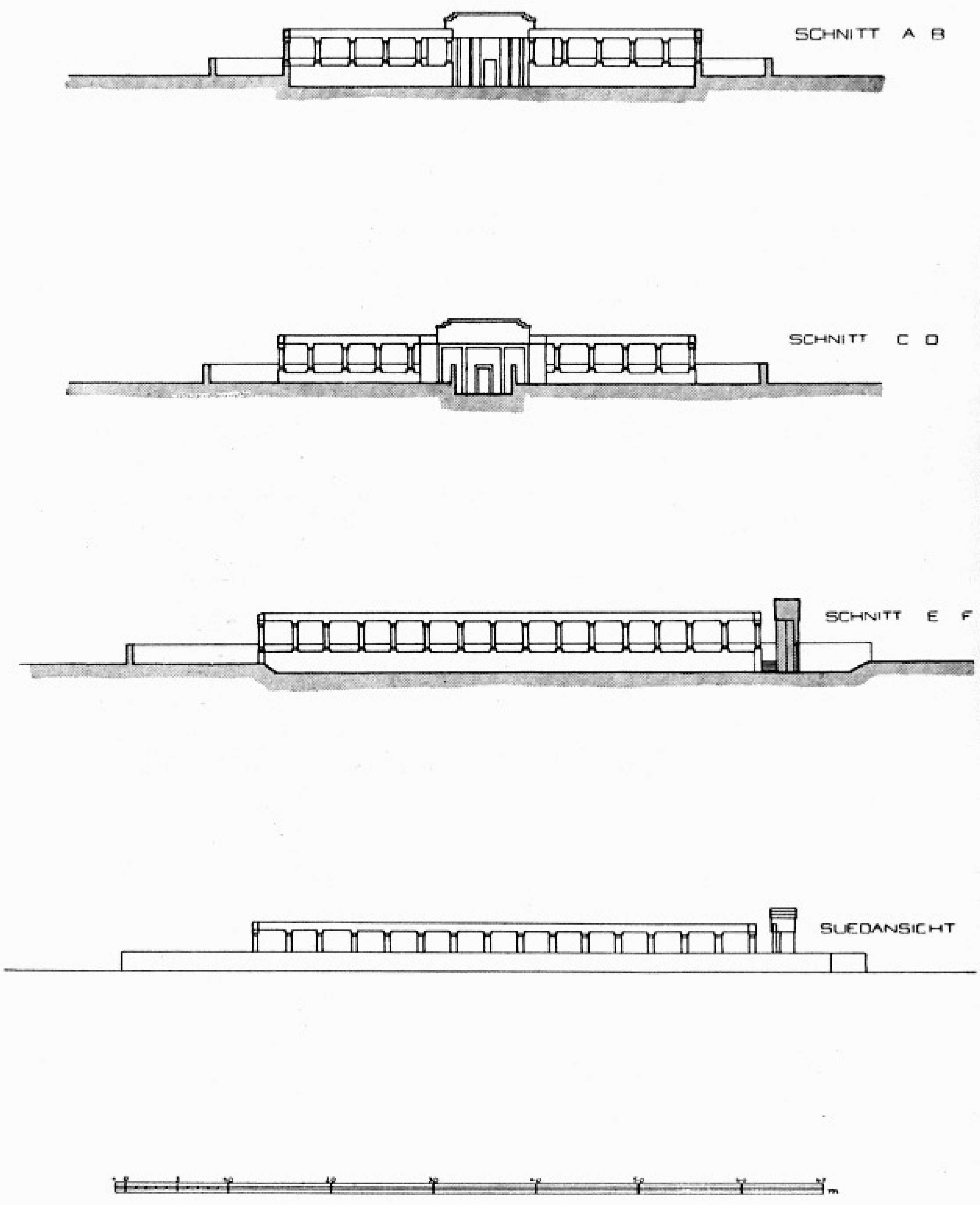

SCHNITT A B
SCHNITT C D
SCHNITT E F
SUEDANSICHT
10
20
30
m

Fig. 50 Reconstruction of the sections and a view of the so-called Palace of Sarcophagi in Tihuanaku.

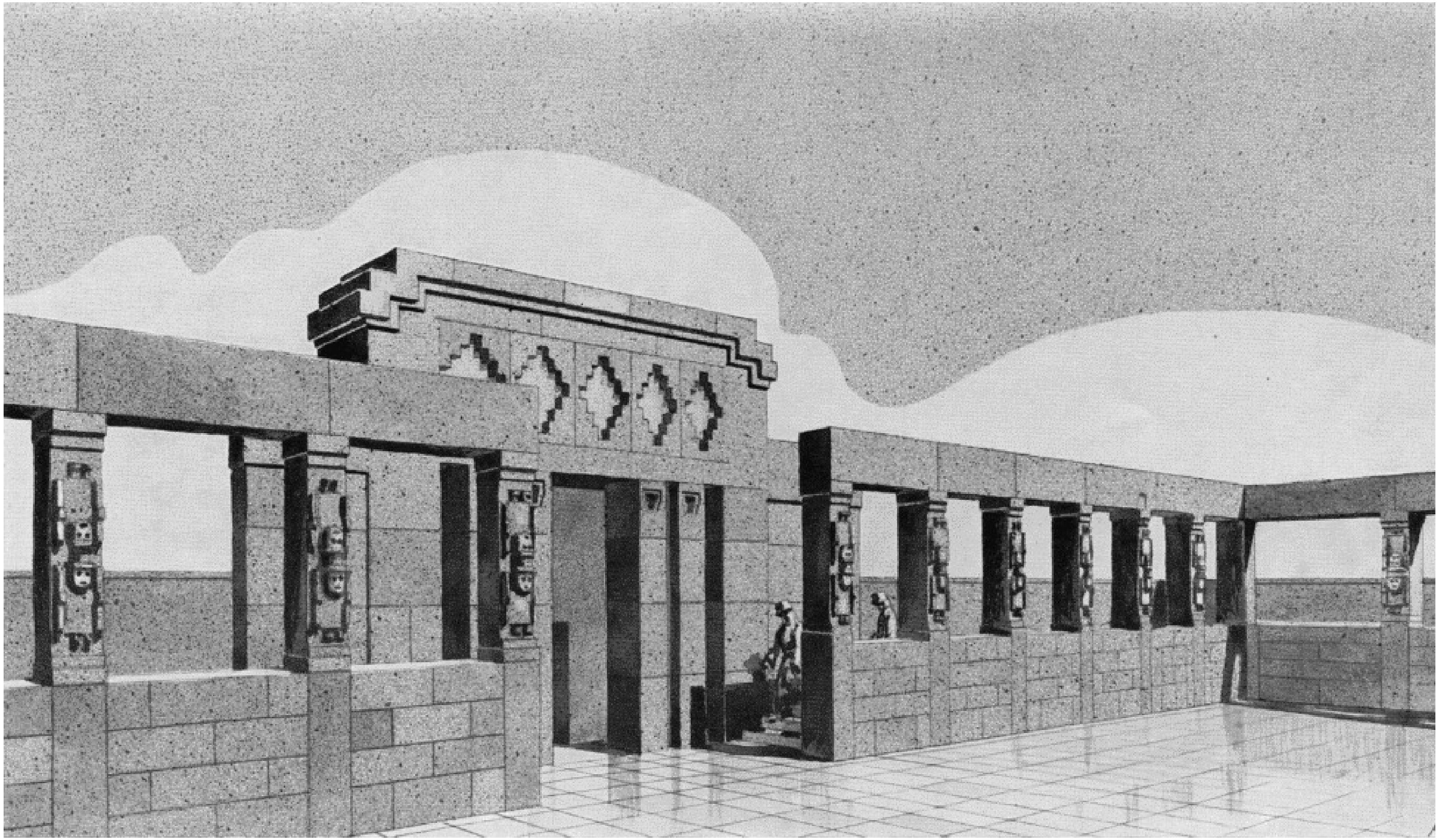


Fig. 51. Diagram of the interior and portal of the so-called Palace of Sarcophagi in Tihuanaku. Reconstruction.

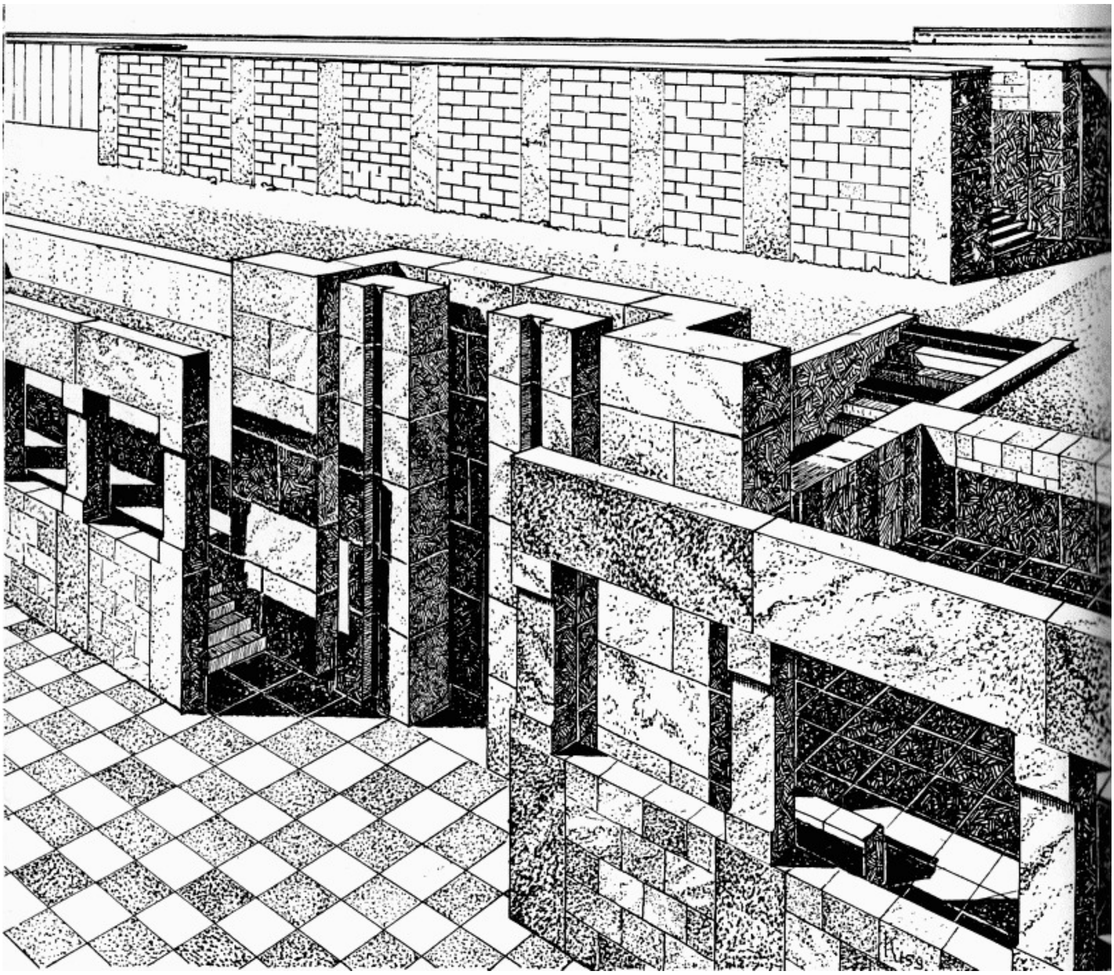


Fig. 52 Palace of the Sarcophagi in Tihuanaku.
Reconstructed floor plan with the coloured staircase in the middle ground on the right.
The Kalasasaya solar observatory in the background.

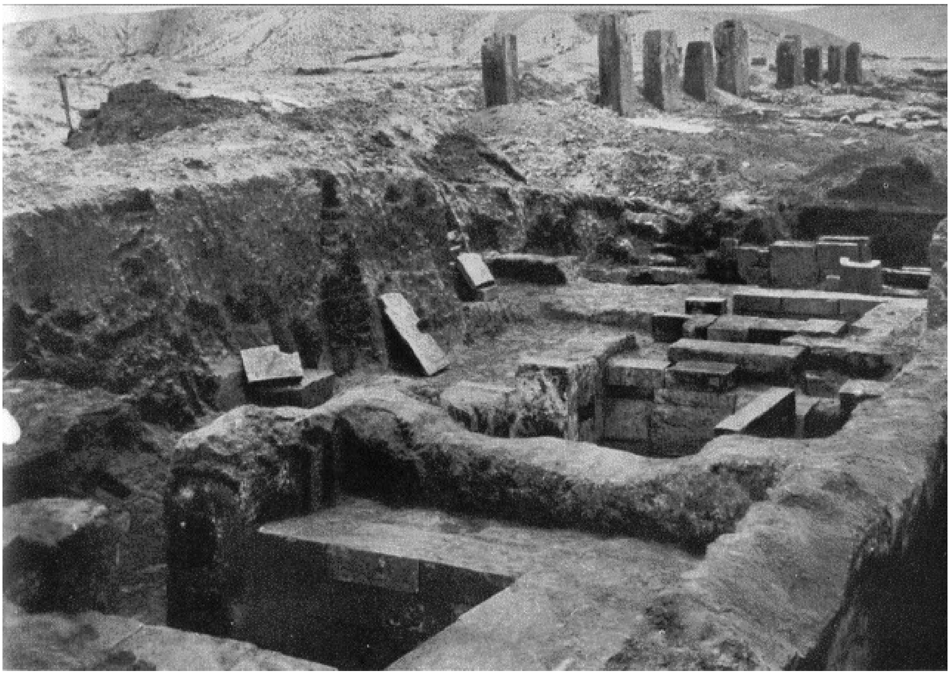
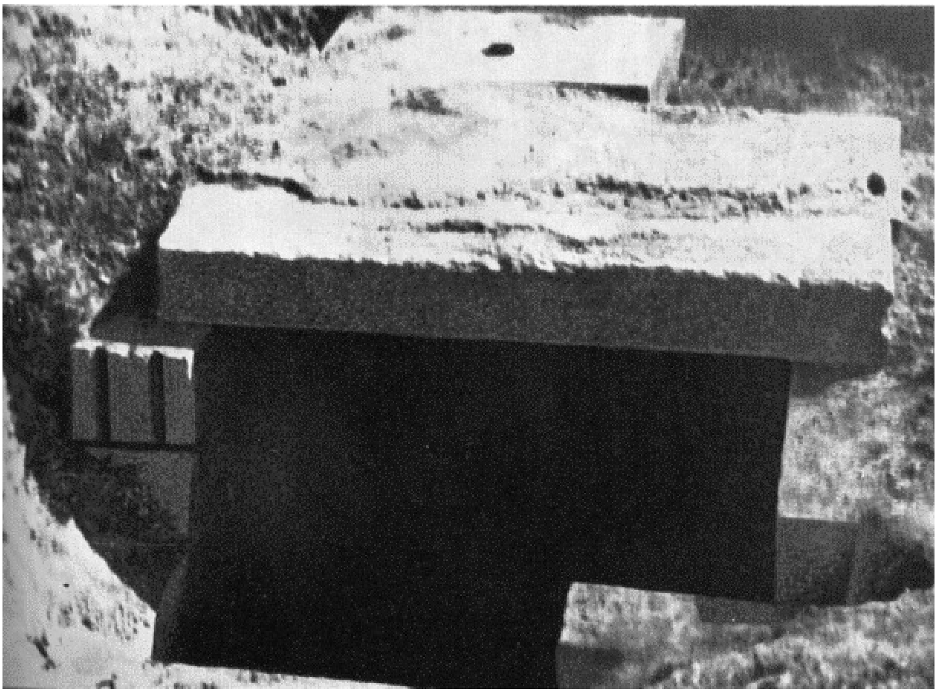


Fig. 53: Underground flats in Tihuanaku. In the background the pillars of the Kalasasaya solar observatory. Phot. Professor Arthur Posnansky in La Paz.

Fig. 54: Underground dwelling in Tihuanaku. In the background a circular hole in the ceiling slab for ventilation of the underground passage.
Phot. Professor Arthur Posnansky in La Paz.



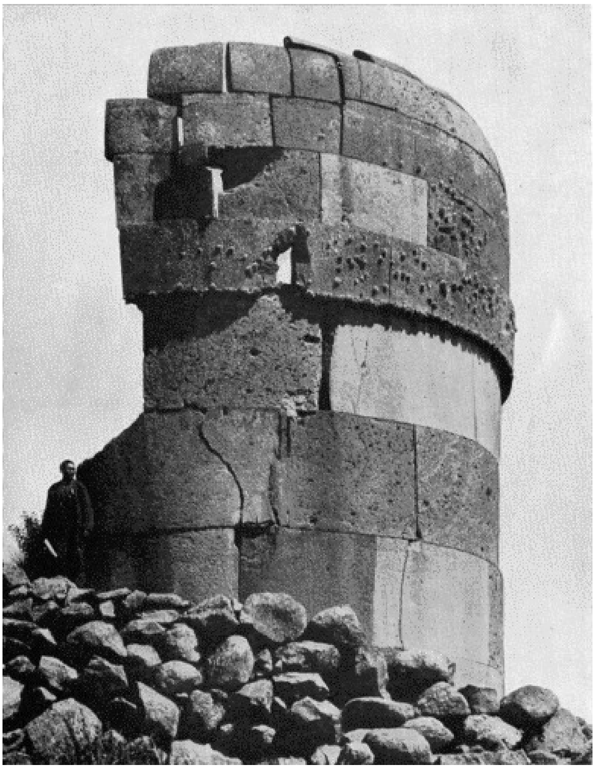
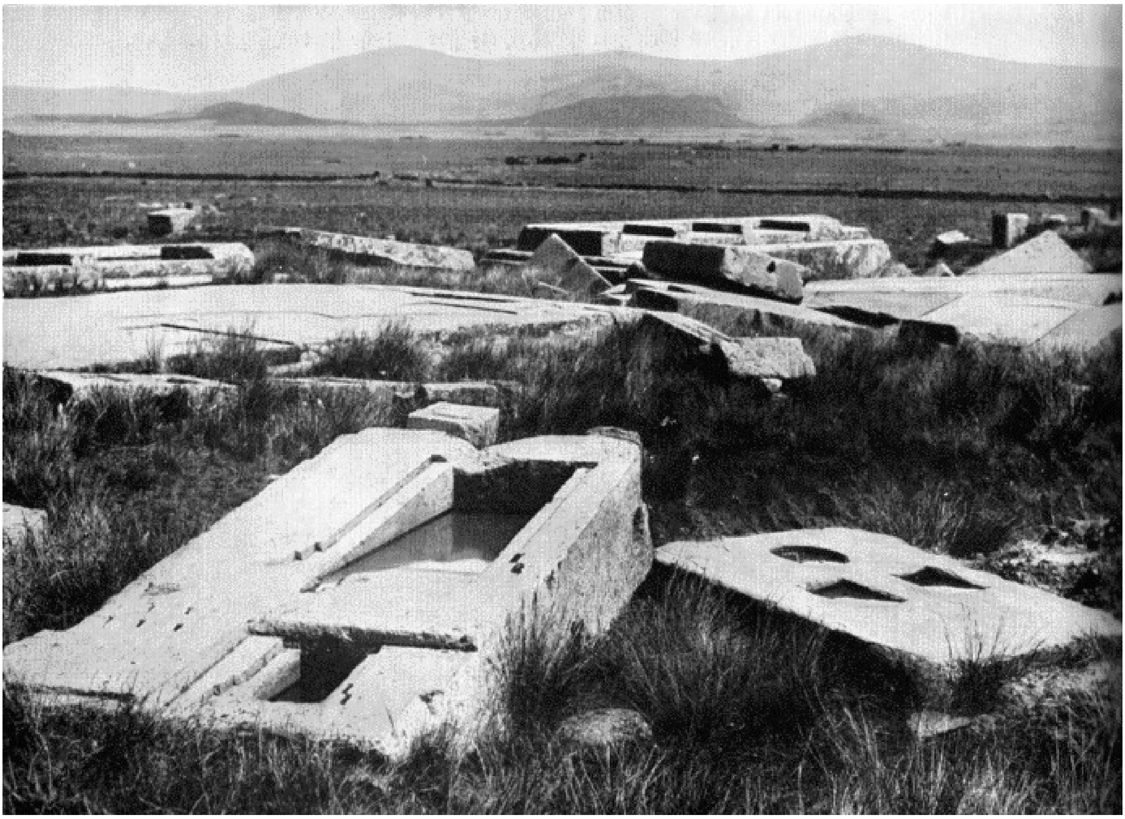


Fig. 55 Unfinished residential tower in Sillustani, Peru.
Phot. Professor Arthur Posnansky in La Paz.

Fig. 56 Ruin field of Puma Punku in Tihuanaku. The massive foundation slabs with the chiselled ground plan of the complex can be seen. In the foreground on the left a monolithic gate, on the right a stone mould for casting bronze dowels.
Phot. Professor Arthur Posnansky in La Paz.



These underground structures are used as cellars by the Indian inhabitants today, especially in the modern city of Tihuana- ku itself. The careful treatment of these underground dwellings described above is not the same for all of them. There are also dwellings with rough-hewn slabs. All these dwellings are very narrow and consist of only one room, which was probably used for sleeping, but certainly for cooking. The dimensions of such a one-room dwelling are 1.20 x 1.40 metres and are not even large enough to stretch out to sleep. A reasonably tall person could not stand in the one-room flat either, as it is only 1.40 metres high almost everywhere. Cooking in the flat was done on a miniature cooker that stood in a corner. There was a circular hole in the ceiling above it for extracting the flue gases. In the accompanying illustration (Fig. 54), the circular hole, which appears as a small oval in perspective, can be seen just below the upper edge of the picture. In one corner, a steep staircase led to the upper world. In stark contrast to the small dimensions of the flats and the ridiculously small cookers, which no housewife would put up with today, is the careful construction of the building below. Its walls, together with the slab-covered floor, consist of polished, precisely fitted stone slabs, the joints of which are pressed so tightly together that even today not a drop of moisture is able to penetrate the underground passage. Some of the workpieces have double grooves and feathering at the joints to give the structure even greater stability. The low ceiling consists of thick, polished stone slabs made of the same building material as the floor and walls (Fig. 53 and 54).

Above-ground residential buildings made of carefully carved house stones from the Tihuanaku period can only be found in Sillustani, on a peninsula of Lake Umayu 20 kilometres north of Lake Titicaca. These "residential towers" show a remarkable level of culture, because it takes a well-trained stonemason to build such a residential tower with a main cornice and a rounded ceiling slab and to fit them together so carefully that even today one tries in vain to wedge a penknife between the joints. These stone towers of Sillustani are earthquake-proof and have withstood all the shaking of the ground to this day, as the huge blocks of basalt lava are joined together with strong grooves and tongues. The attached Fig. 55

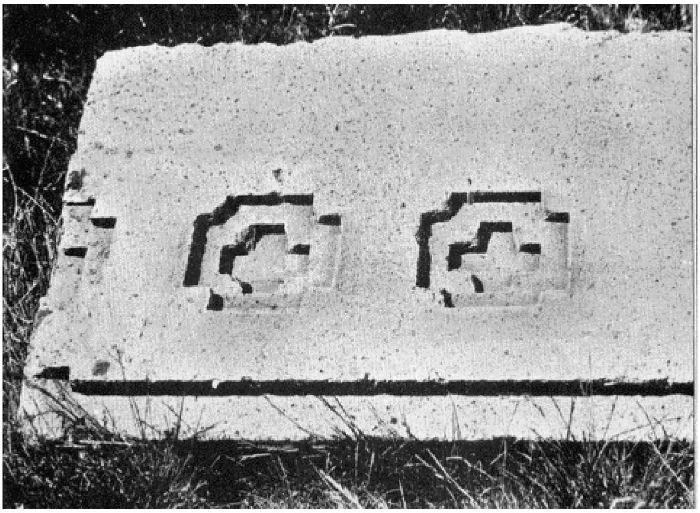
does not show a collapsed building, but an unfinished one, the completion of which was prevented by events of some kind. Close to the former lake of Tihuanaku, there is a place within the ruined city that is called Puma Punku by the natives. It encloses a large area of ruins with a clearly recognisable core of huge blocks of trachyte and andesite that once formed the foundations and walls of a very artistically mature complex, a mausoleum that probably served as a burial place for priests or kings (figs. 15, 56, 57, 58, 59, 60 and 61).

The ruins of Puma Punku are located on an artificially created hill - similar to Akapana - which was formed in the shape of a terrace with brick supporting walls. Unfortunately, this ruin site, like all the others in Tihuanaku, has been used as a quarry for thousands of years by those who wanted to build modern buildings with the carefully hewn and precisely cut stones. Fortunately, it was not possible to transport the stones, which weighed around 10 tonnes, out of the country, as the poor road conditions on the Bolivian highlands did not allow this. In this way, many things were preserved that would otherwise have been lost, especially stones that were important for the attempt at reconstruction, such as the monolithic portals and the heavy stones covered with artistic sculpture, which clearly show the structure of the old building. Moreover, since the ground plan of the complex is carved with all desirable accuracy on the floor slabs, some of which weigh over a hundred tonnes, and the areas on which the walls had stood have been left as raised surfaces due to minor weathering, it was not hopeless to undertake a reconstruction.

The entire complex is fronted by a double harbour basin (Fig. 10). A larger-than-life idol of the deity of the lake, covered with carved fish ornaments, still stands today at the site of the quay, the unloading point for the ships in the harbour of Puma Punku. Between the harbour and the mausoleum there was probably a 30 m wide shore road (Fig. 62).

The discovery of a Greek-style main cornice was very interesting and almost astonishing. It even bears triglyph-like consoles under the slab at intervals of one metre (Figs. 63, 64 and 65). Also a

Fig. 57 Part of a main frieze on the ruins of Puma Punku in Tihuana- ku. Phot. Professor Arthur Posnansly in La Paz.



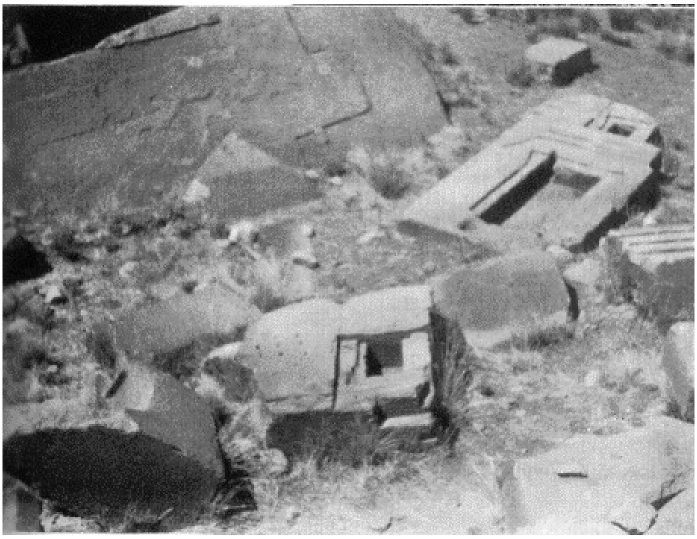
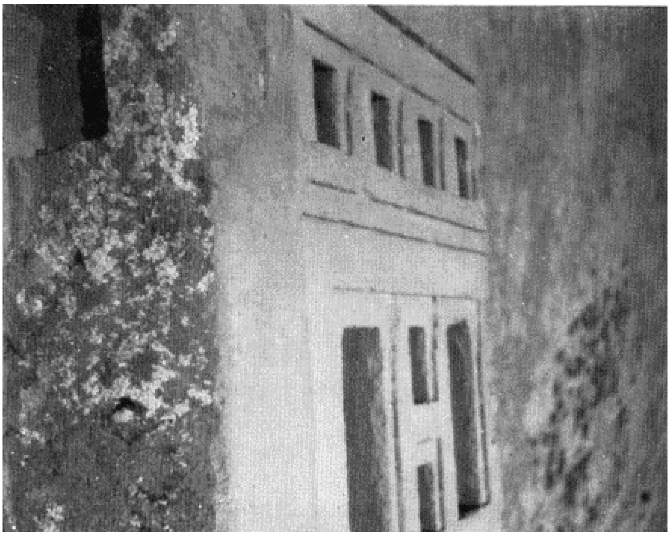


Fig. 58: Fragments of portals and niche friezes on the ruins of Puma Punku in Tihuanaku.

Fig. 59: Facade model near the ruins of Puma Punku in Tihuanaku.



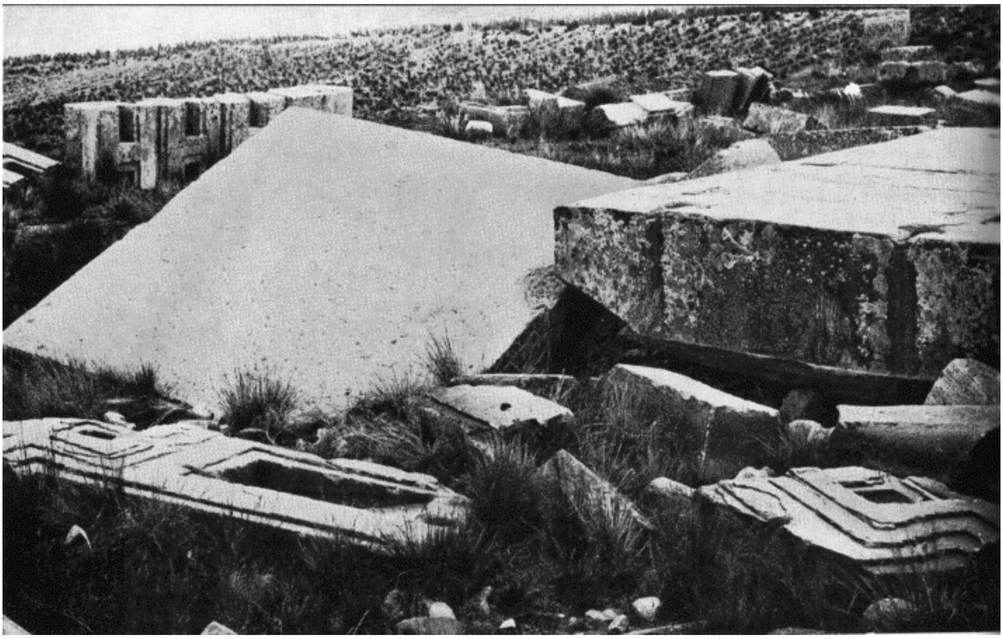
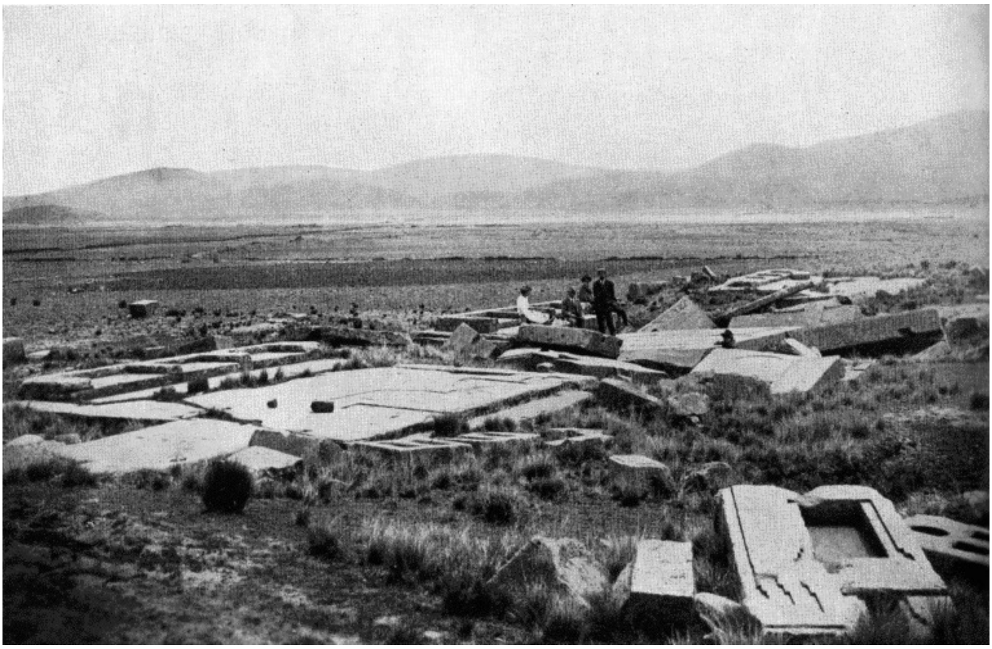


Fig. 60: The huge ground plan slabs of the mausoleum of Puma Punku in Tihuanaku. In the foreground fragments of monolithic portals. In the background, niche stones that had been set up by mistake but were not moved because the construction of the city was interrupted in its final stages by a catastrophic natural event. Phot. Professor Arthur Posnansky in La Paz.

Fig. 61 General view of the ruins of Puma Punku in Tihuanaku. Phot.
Professor Arthur Posnansky in La Paz.



The second main cornice, a cranked piece but without triglyphs, is also present. The art treasures, which still lie under mud and rubble, will probably have to lie unexcavated for a long time to come, as there are no funds available for expert excavations for the time being.

The base plates of the mausoleum weigh between 60 and 100 tonnes (Fig. 66). The ground plan is largely hewn into this solid foundation (figs. 66, 67 and 68). The walls and ceilings of the building were made of andesite lava of a grey-blue colour. The individual workpieces were joined together by bronze clamps and dowels, as is still common today. Mortar was not used. The joints were pressed so tightly together that a binding agent was not needed. Dowels and clamps were cast in situ in existing stone moulds, probably in sand beds.

The sculptor's work is surprisingly precise and sharp, the stones are exactly rectangular. Some of them look as if they have only recently been completed. The portals, like the Sun Gate in the Kalasasaya, have been chiselled together with their side niches from a single block of andesite. The stones with ornamental decoration, placed on top of each other, formed interesting decorations that covered the walls on one side with an abundance of niches and on the other side simultaneously covered the wall with a group of crosses (figs. 69, 70, 71, 72, 73 and 74).

Some other stones with enigmatic sculpting have been interpreted by the author as frieze parts of main cornices. Reconstructions are shown in Figs. 73 and 74.

Two doors led from a broad staircase platform into the interior of the building to open halls whose walls were covered with niches of various types and sizes - perhaps to accommodate small idols (Figs. 64, 65, 66, 67, 68, 69, 70, 71, 72, 73 and 74). The anterooms of the likewise covered burial chambers, which were covered horizontally with heavy stone slabs, were entered through tiny sluices. From here, very small doors led into the individual cells, which were used to house the mummies of the deceased. On the western outer side of the building, the burial chambers were fronted by a series of large niches open to the outside, which presumably contained altars. The mausoleum of Puma Punku served as an exception for only 13 dead.

Other mausoleums, but with even smaller cells, are located in other places.

The ruins of the ruins of Tihuanaku are still present, so that it can be assumed that this complex of Puma Punku is the largest, but not the only one of its kind in the prehistoric metropolis on the sloping lake.

The Puma Punku mausoleum was never completed. It shared this fate with a large part of the other buildings described above. The heavy stones still stand today in the same place where the mason had them placed in order to move them on one of the following days. The chisel lies next to the sculptural work that has been started, as does the silver or bronze plumb bob, because it was forgotten when they went out to celebrate and perhaps they hoped to find it again the next day when they started work. The plumb bob and chisel are still waiting for the foreman and bricklayer, and the stones lined up near the base plates will not be moved, even though they have been waiting for quite a long time (Fig. 15).

Figs. 62-75 show the appearance of the mausoleum in the author's reconstruction.

A number of other buildings on the ruins of Tihuanaku still await exploration and, in particular, measurement. The description of Tihuanaku's buildings has been as brief as possible. In particular, the attempts at reconstruction were intended to give the reader the probable appearance of a large city that was located in unknown times on the "sloping" lake of Tihuanaku, which would not fill up again today, whatever attempts were made to achieve this. So there was once an advanced civilisation on the shores of this inclined lake, which probably surrounded a people of millions, whose food supply was secured for long periods of time by the cultivation of the above-mentioned stepped fields on the mountain slopes of Bolivia and Peru. It is true that many of Tihuanaku's buildings and components date from different periods of art separated by thousands of years, so the overall picture of the city, as the reconstructions attempt to show, is not a uniform one. What is certain, however, is that at the time when the harbours were usable, the city had at least the same layout as in later eras, namely that the Akapana fortress with its surrounding harbour channel and the Kalasasaya were already present and that Puma Punku with its two harbours already existed in its original form when large cargo ships still travelled far across the sea to fetch the building blocks from Kijappia, 50 km away.

If some uncertainty has been introduced into the assumption that the

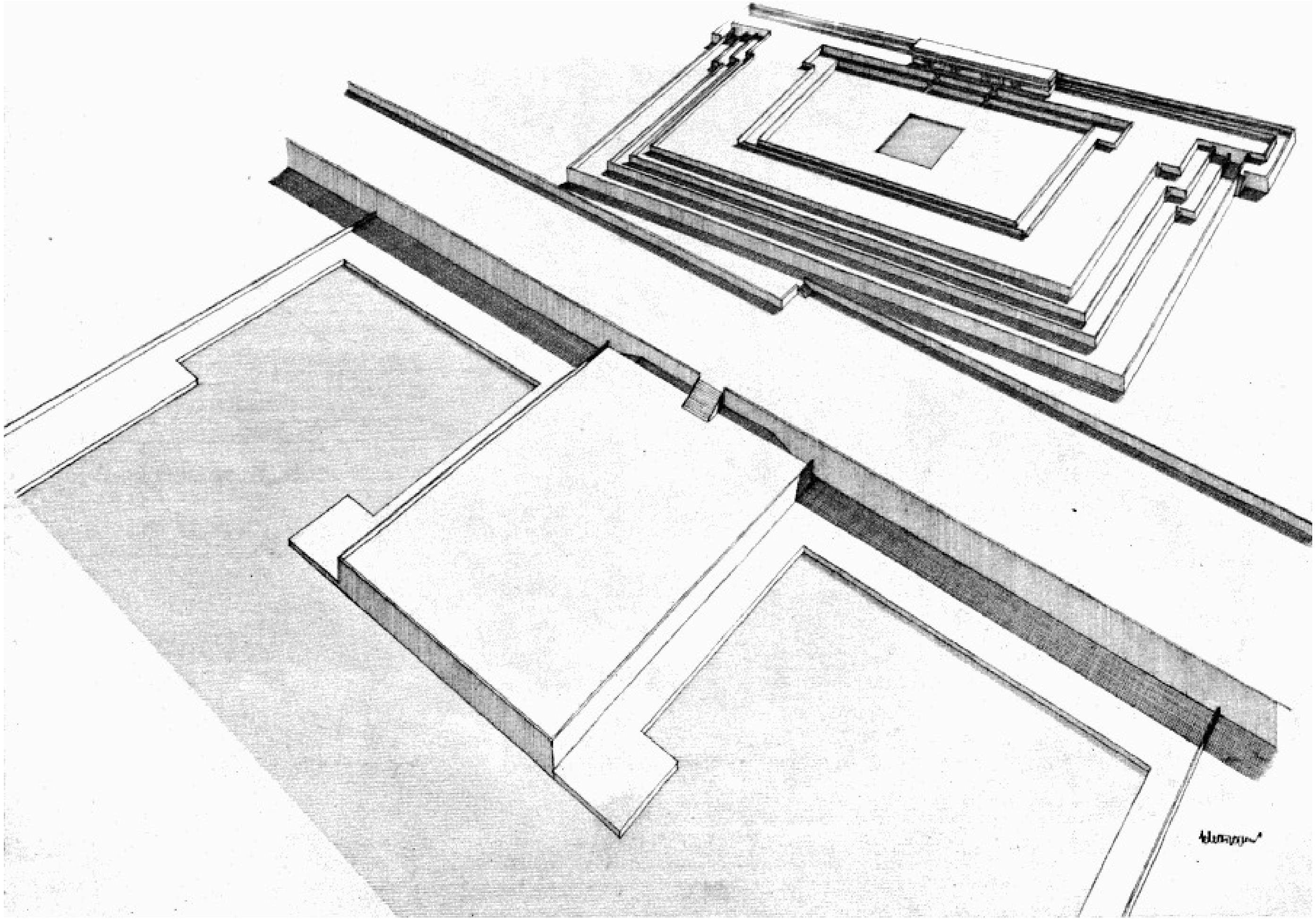


Fig. 62 Diagram of the site plan of Puma Punku in Tihuanaku. Reconstruction. In the foreground the two harbours, in the middle ground a wide shore road and in the background the terraced building with the mausoleum.
Drawing by Regierungsbaurat Kleinpoppen in Essen.

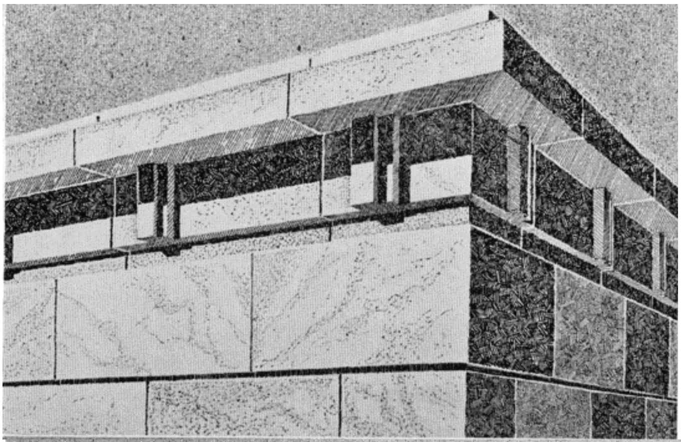
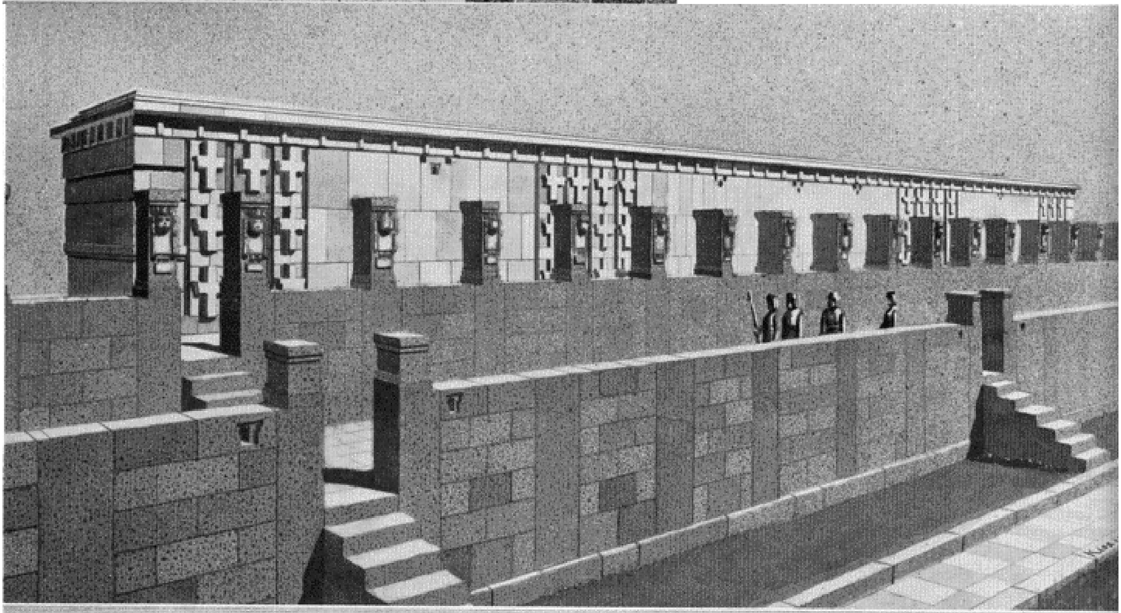


Fig. 63 Main cornice of the mausoleum of Puma Punku in Tihuanaku. The similarity with the Greek Doric main cornice is striking.

Fig. 64: Diagram of the Puma Punku mausoleum in Tihuanaku. View from the east. Reconstruction.



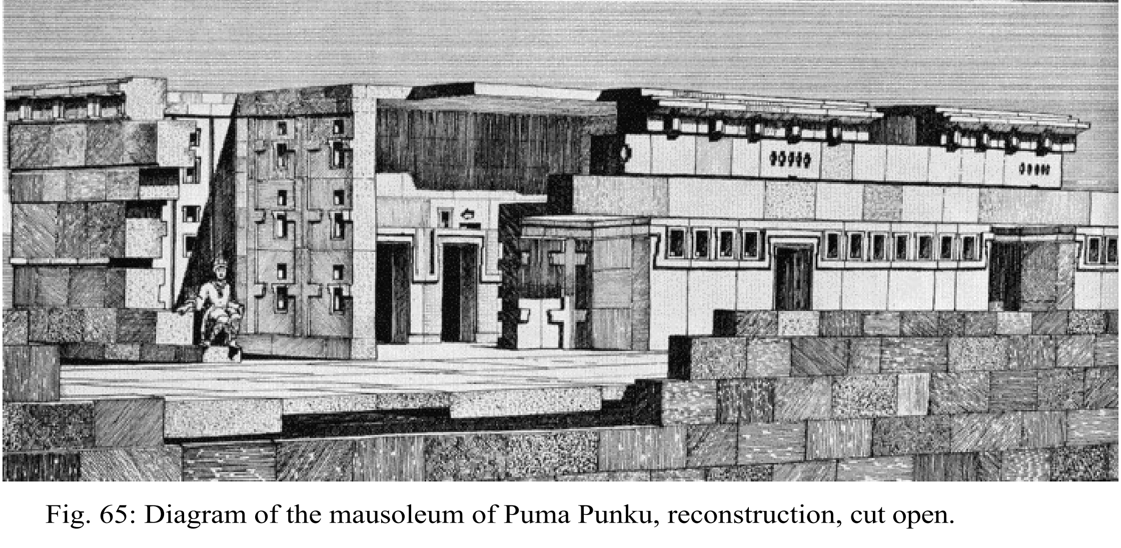


Fig. 65: Diagram of the mausoleum of Puma Punku, reconstruction, cut open.

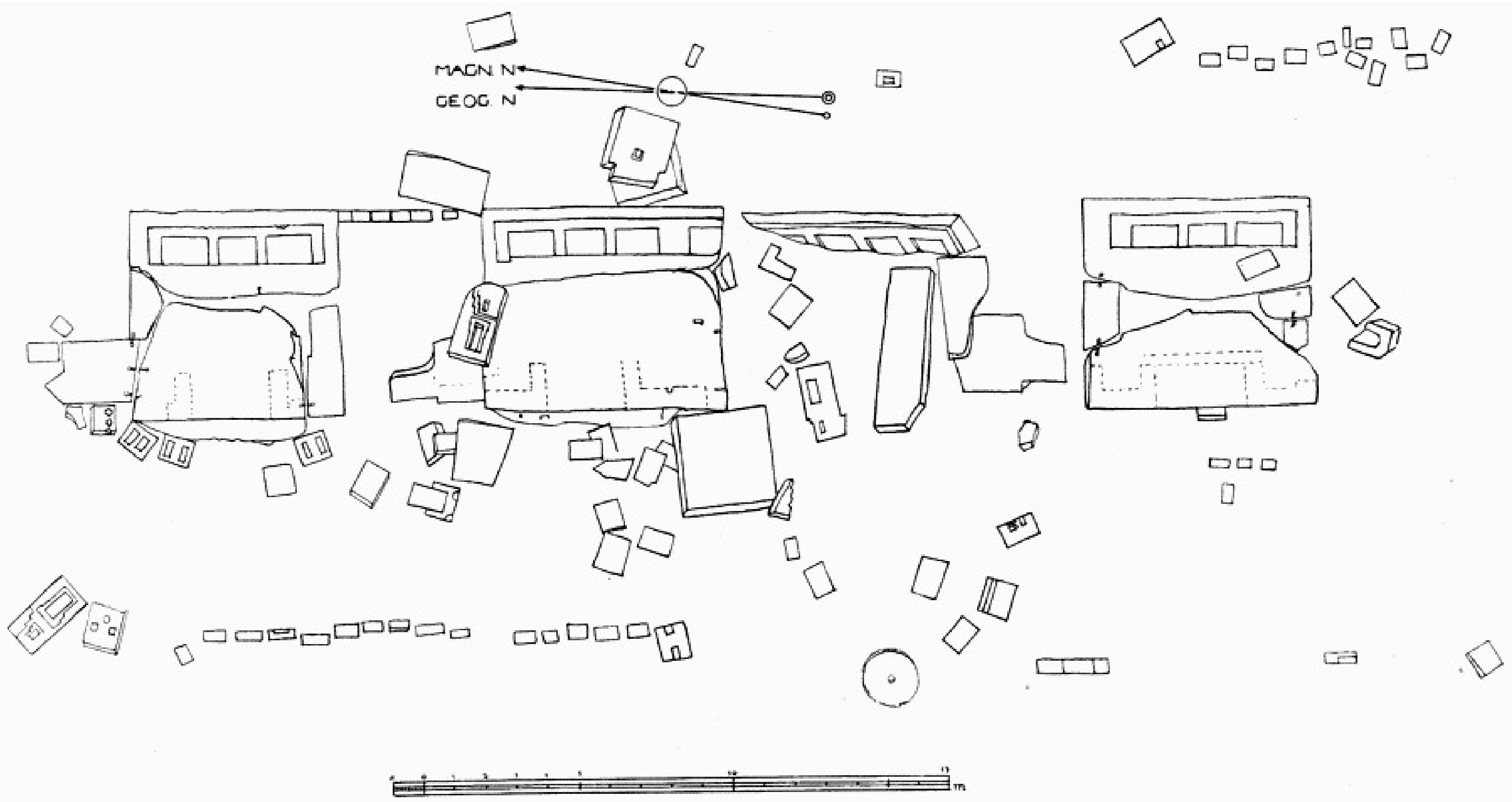

MAGN N
GEOG N
0
5
10
m

Fig. 66 Plan of the ruins of the mausoleum of Puma Punku in Tihuanaku based on photographs by Professor Arthur Posnansky in La Paz.

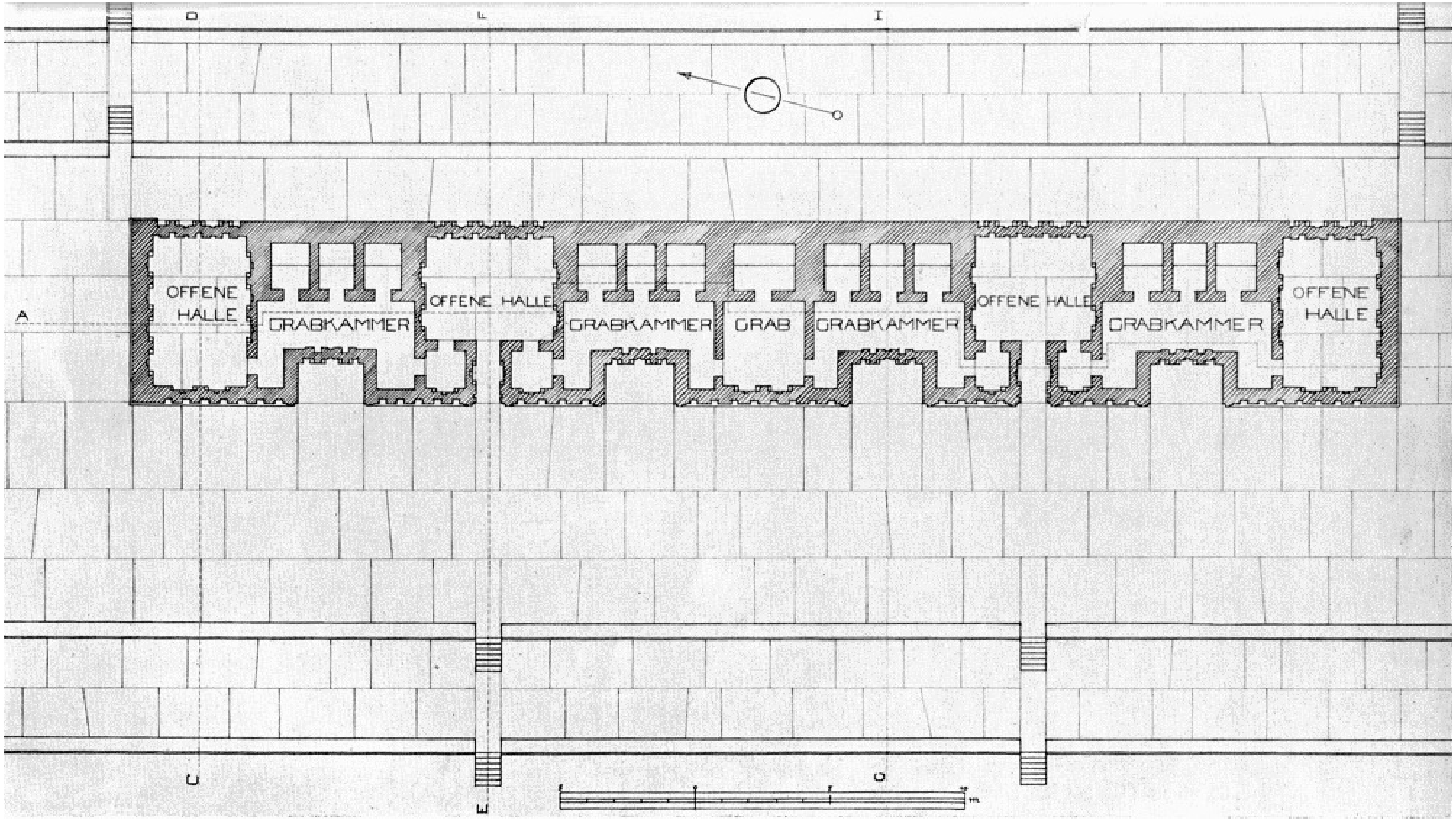

D
F
I
A
OFFENE HALLE
GRABKAMMER
OFFENE HALLE
GRABKAMMER
GRAB
GRABKAMMER
OFFENE HALLE
GRABKAMMER
OFFENE HALLE
C
E
G
m

Fig. 67 Floor plan of the mausoleum of Puma Punku in Tihuanaku. Reconstruction.

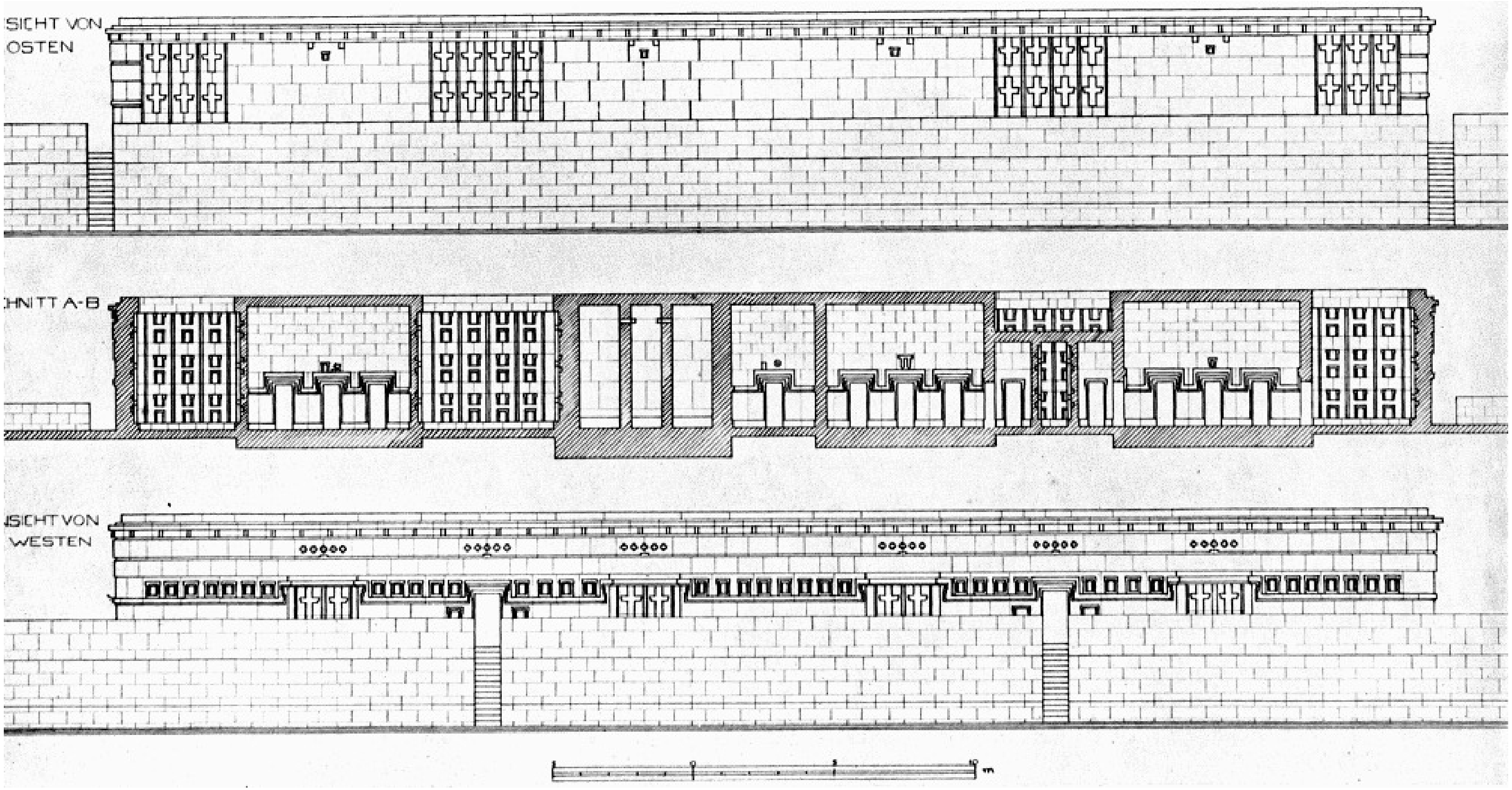

SICHT VON
OSTEN
HNITT A-B
SICHT VON
WESTEN
m

Fig. 68 Longitudinal views and longitudinal section of the mausoleum of Puma Punku in Tihuanaku. Reconstruction.

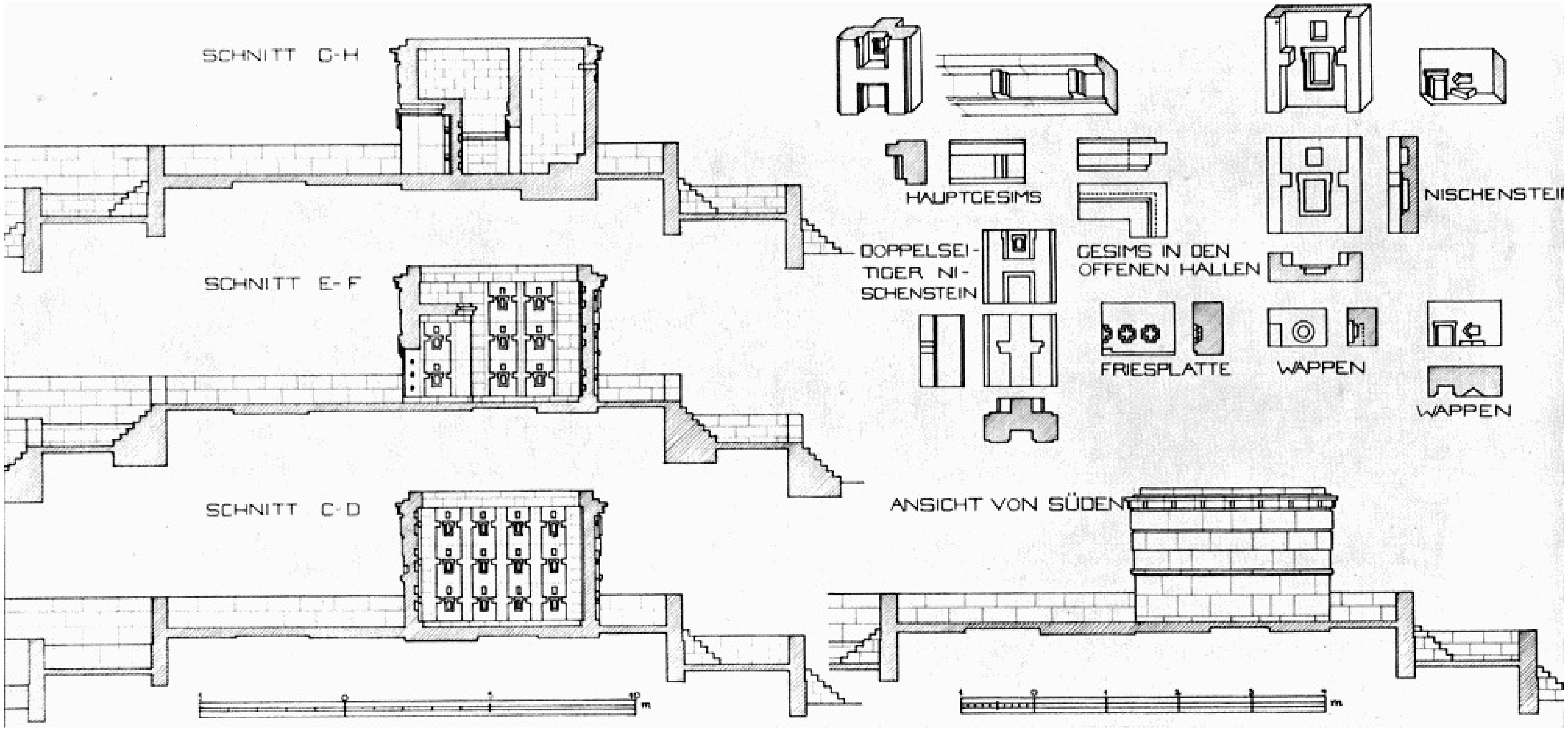

SCHNITT G-H
SCHNITT E-F
SCHNITT C-D
HAUPTGESIMS
DOPPELSEITIGER NISCHENSTEIN
GESIMS IN DEN OFFENEN HALLEN
NISCHENSTEI
FRIESPLATTE
WAPPEN
WAPPEN
ANSICHT VON SÜDEN
m
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Fig. 69: Cross-sections, side view and individual parts of the mausoleum of Puma Punku in Tihuanaku.

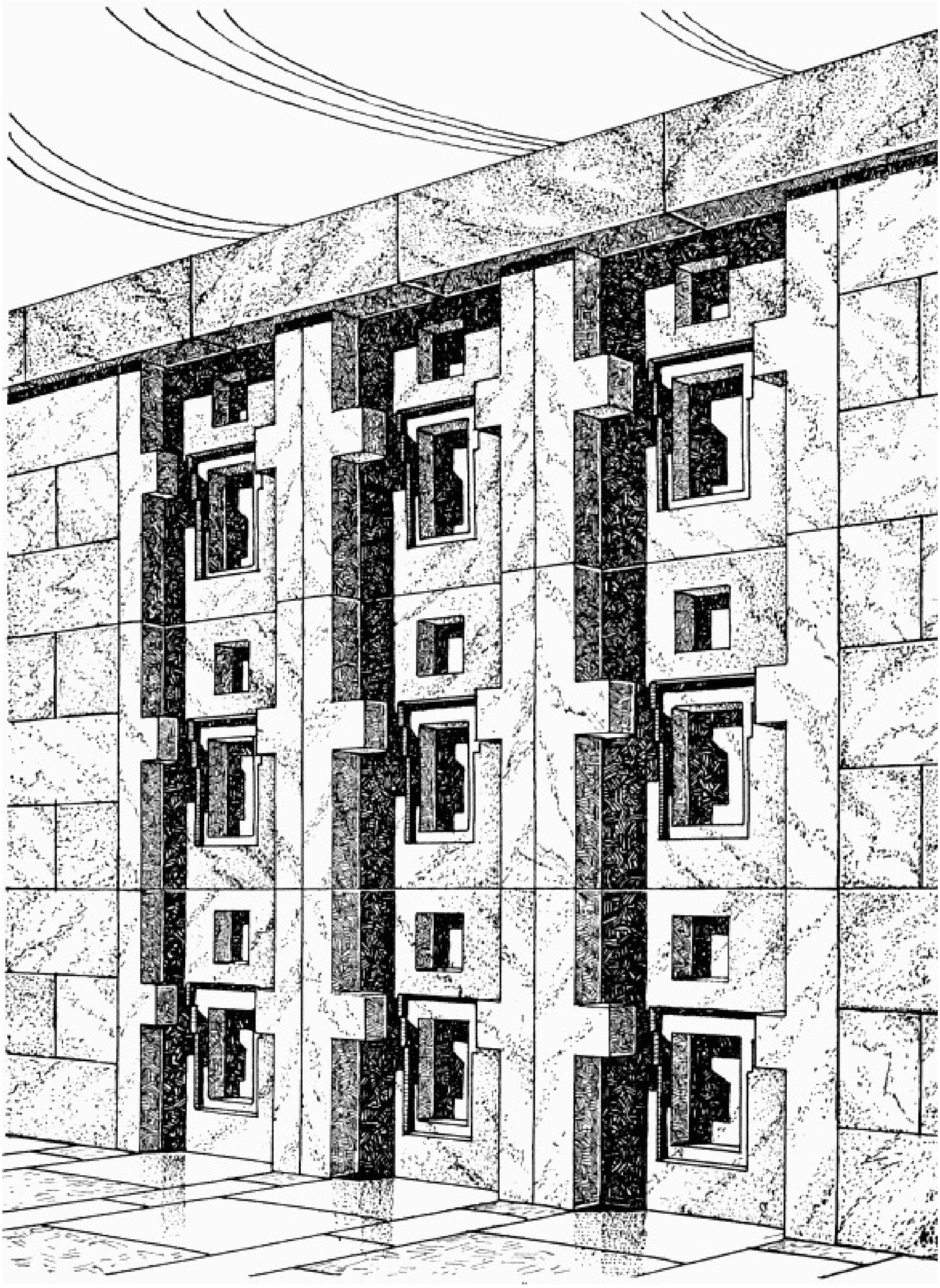

Fig. 70: Diagram of an interior of the mausoleum of Puma Punlu in Tihuanaku.

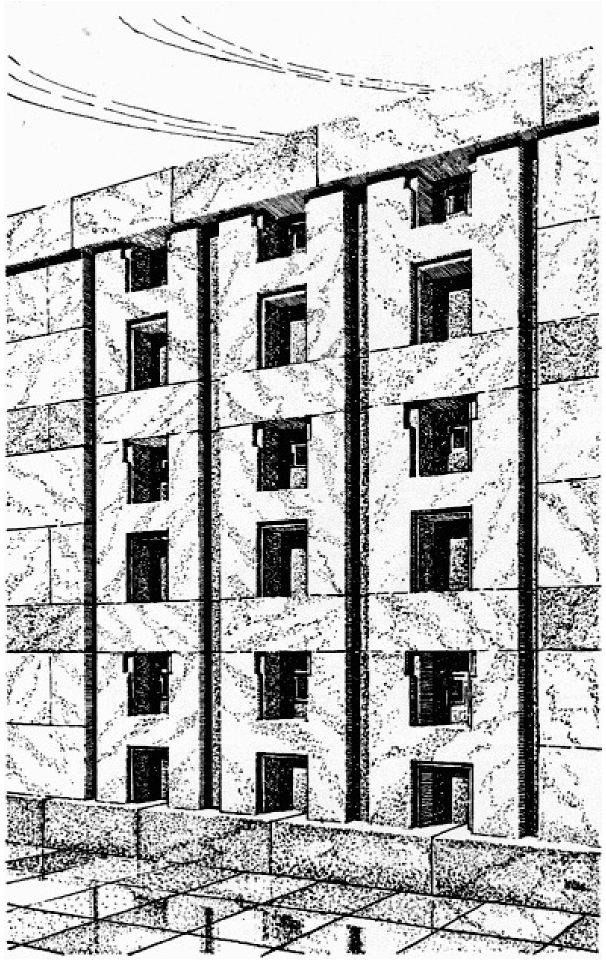

Fig. 71 Diagram of the interior of the Puma Punku mausoleum in Tihuanaku.

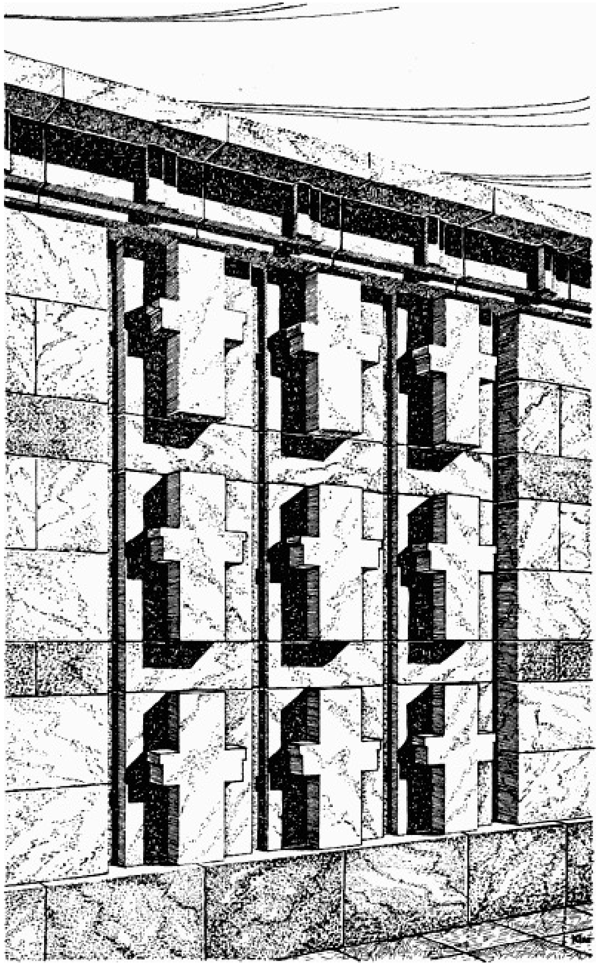

Fig. 72: Diagram of part of the eastern outer wall of the mausoleum of Puma Punku in Tihuanaku.

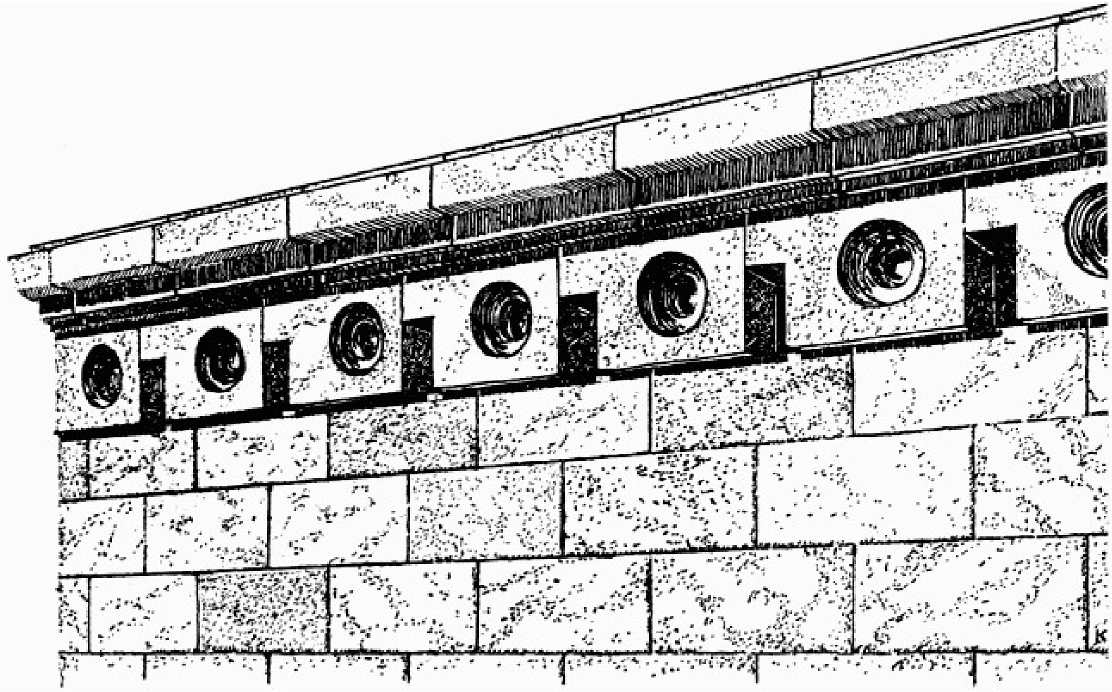

Fig. 73 Reconstruction of a main cornice in Puma Punku in Tihuanaku.

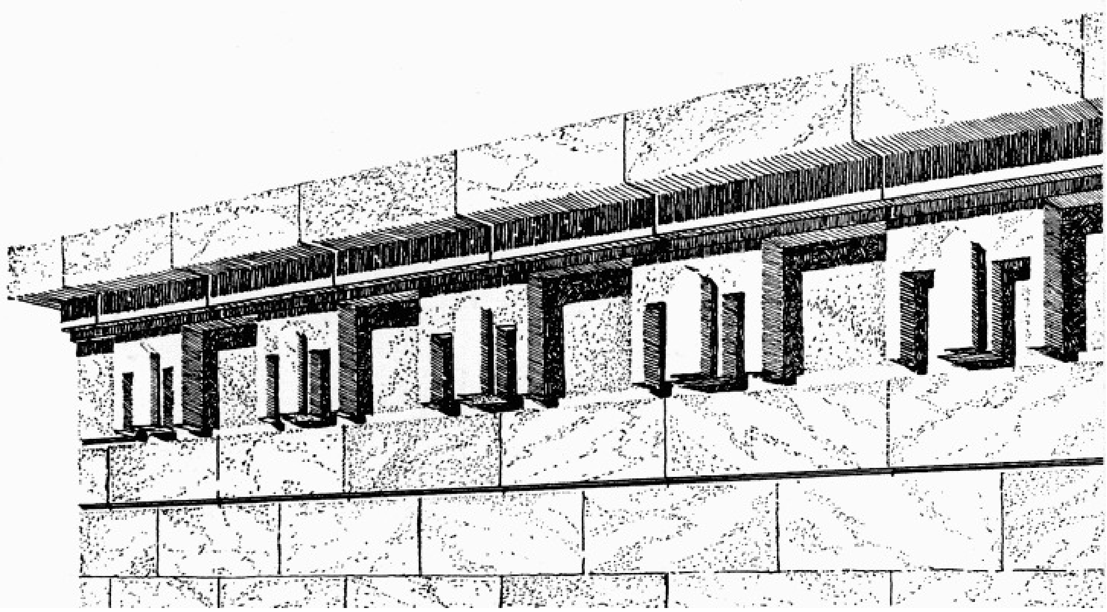

Fig. 74 Reconstruction of a main cornice in Puma Punku in Tihuanaku.

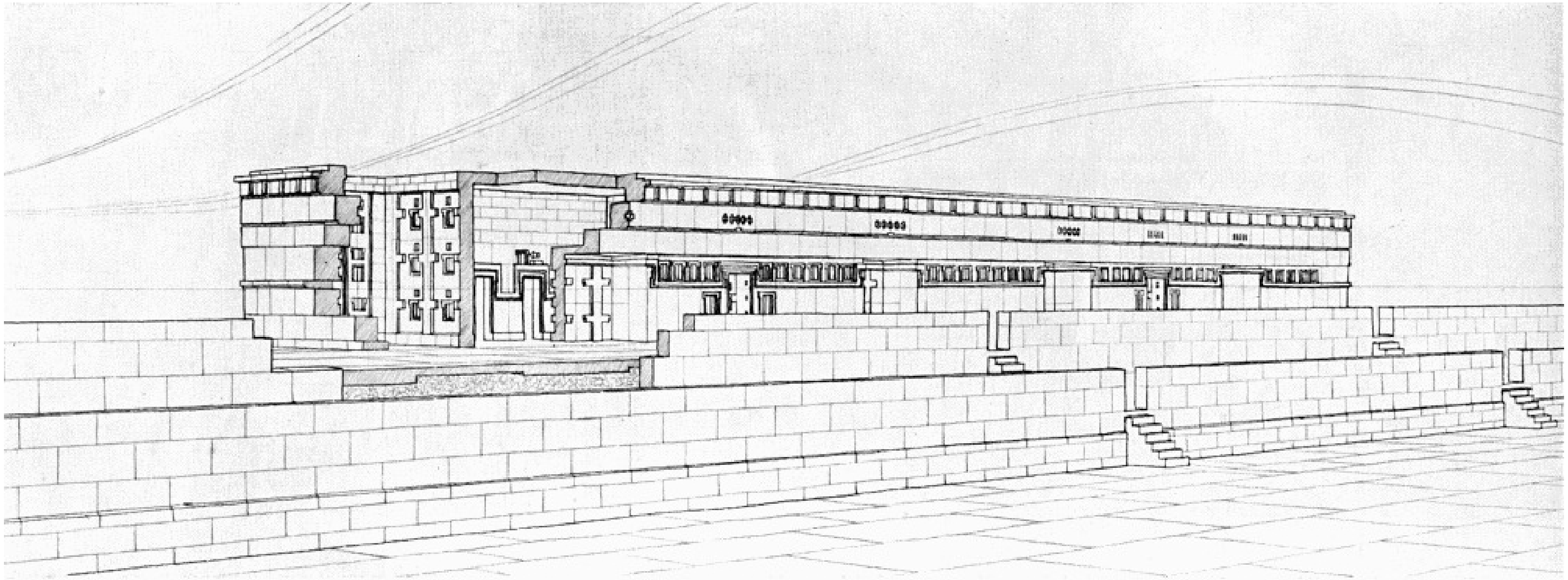

Fig. 75: Diagram of the reconstruction of the mausoleum of Puma Punku in Tihuanaku.

If we assume that the advanced civilisation of Tihuanaku already existed *before the Meseta tilted by a certain angle together with the continent of South America and then rose to produce the present harsh climate, which makes the actual plateau almost uninhabitable, if further repetitions of these movements in the presence of two strandlines on the shore mountains of the ancient lake make these movements of an entire continent even more improbable*, then an attempt may be made in the following section to provide a different explanation.

As mentioned above, this explanation should be based on Hörbiger's theory of world ice.

II

The land of the Andean metropolis Tihuanaku in the light of Hanns Hörbiger's world ice theory

Dhe world ice theory is of the opinion that our current moon, Luna, is not the first and only moon that the earth has possessed.
Luna was believed to have been captivated by the Earth's gravity not so long ago and permanently bound to it. The world ice theory considers the current moon Luna to be a formerly independent planet that travelled its own orbit around the sun between Mars and Earth. Since this planet Luna had a much lower mass and density than the Earth, it was condemned to shrink towards the sun faster than the heavy Earth, which proved to be more powerful against the inhibiting medium, due to the inhibiting space drag.

According to the world ice theory, this inhibiting medium consists of highly diluted gases and dust masses, which are found particularly in inner-planetary spaces, but also in intrastellar spaces, only here not in the same density. However, if such an inhibiting medium exists, all bodies that are forced to orbit in it must experience a deceleration that is visible over long periods of time; according to Kepler's laws, they must move their orbits closer to the central body they are orbiting in tightly wound spirals and at the same time accelerate their orbital speed. A moon orbiting between Mars and the Earth must therefore move closer to the Earth's orbit over the course of thousands and millions of years and eventually somehow come into conflict with the Earth itself. In particularly close encounters between the two planets, it can happen that the smaller planet is literally captured by the larger planet and turned into its satellite. According to Hanns Hörbiger, one such satellite is our Luna, which was once an independent planet.

Before Luna's inception, the Earth therefore experienced a moonless age.

But there were also predecessors to Luna, other moons that were in the They were captured and bound by the Earth's gravity in the same way as the moon Luna, which is our Earth satellite today. All these lunar predecessors were hopelessly doomed to the Earth, for in the same way as they shrank towards the Earth's orbit as planets due to the aforementioned space drag and were then captured by the Earth, they shrank even closer to the Earth's surface as satellites and, when they had shrunk close enough to the Earth's surface, were torn to pieces by the gigantic tidal force of the Earth and finally sent their debris crashing down onto the Earth in a tangential course.

At the time when the capture of the so-called "Cenomoon", the predecessor of Luna, by the Earth's gravity was imminent, the Andean massif at the place we now call the Meseta of Bolivia and Peru rose perhaps 7000 metres above the surface of the still moonless terrestrial ocean. Compared to today's ocean, which covers the globe with an average depth of 2.5 kilometres, this ocean can only have had a shallow average depth. It was often only 1-1.2 kilometres deep. This estimated ocean depth is only intended to describe the probable state of the oceans in pre-caenomoonal times. It is quite possible that the depth of the Earth's oceans was even shallower, i.e. the conditions on Earth were just the reverse of today's. The dry land was predominant and the oceans had little expanse. The earth therefore still lacked the increase in water that it would later receive when the cenomoon fell, which, according to the world ice theory, was covered by a frozen ocean. The later addition of this ocean water from the tertiary satellite thus created the increase in ocean depth to the degree that we observe today.

Therefore, the meseta of Bolivia, although under a tropical sun, was at an altitude that probably had a similar, if not more unfavourable climate than in the present day. Presumably there were no human cultures of any significance on the Altiplano at this time before the capture of the cenomoon, because the living space on the whole earth was so large in more favourable climates that there was no need to cultivate these mountainous plains.

This situation will hardly have changed when the predecessor of today's satellite Luna, the cenomoon, became a terrestrial dependency, i.e. was turned from a planet into a satellite. After all, this event had very serious consequences for the Earth. The mutual tidal effect of the two world bodies initially had the effect that the ocean at that time flowed in a shallow tidal wave towards the equator and thus left the northern and southern regions in part. This resulted in a flood-induced shift in the existing state of equilibrium on the whole earth, and since the newly captured tertiary satellite lagged considerably behind the earth's rotation in its orbit, it attempted to pull the earthly water masses backwards around the ball of the earth at the equator. The fact that it did not quite succeed was then, as it is today with Luna, due to the terrestrial land barriers that prevent the formation of a belt current running backwards around the ball. Seismic and volcanic tremors of considerable magnitude must have been the consequences of the cosmic event of the capture of the cenomoon, but the misfortune of the moon's capture essentially only affected the inhabitants of the lowlands. The few and probably poor inhabitants of the highlands between the Andes of South America, if there were any, will have escaped with a fright. Although the fields of these people will have suffered from the ashfall from the fiery mountains of the Andes, there can be no question of a catastrophe, if only because the country was probably very sparsely populated.

A perceptible difference, however, will also have been recognisable on the Meseta compared to pre-cenozoic times, namely an improvement in the climate, albeit a slight one. Not only did the sea level of the highlands decrease due to the rise of the terrestrial ocean at the equator, but the air bulge that lay over the Cordilleras may also have become denser as a result of a flood-like movement of the terrestrial air masses from the poles to the equator, i.e. the atmospheric protective mantle against the radiation of the heat received from the sun became more powerful, so that higher temperatures could develop on the highlands. At the poles, however, as is the case today at the beginning of the Luna period, frost began to extend its cold arms towards the mid-latitudes, as the air cover was sucked away by the lunar tide, the heat cover
that forms the air for the earth's crust.

Further drainage in high and soon also mid-latitudes brought a drying of the globe from the poles downwards and a concomitant glaciation that extended to ever lower latitudes. The approaching satellite sucked the Earth's warming protective cover, the air, away from the polar regions, leaving behind only a thin, ineffective blanket as insufficient thermal protection.

The habitat of mankind, the fauna and flora of the earth, was shrinking rapidly. Without realising this fact - after all, these were periods of time that no historical research at the time was able to determine - the inhabitants of the earth allowed themselves to be pushed towards the same direction. But here, too, space had become cramped. The rising ocean was already rolling backwards around the globe in zenith and nadir, i.e. in the opposite direction to the Earth's rotation. The orbital velocity of the tertiary satellite still lagged behind the rotational velocity of the Earth for a long time! The tidal hills, which oscillated in relation to the Earth's equatorial plane due to the angular inclination of the satellite's orbit, did not rush in the same eternal bed, but rushed northwards and southwards over large stretches of land, which consequently had to be avoided by humans and animals. On the thus more than restless shores of the lower latitudes, on the border of the glaciation, some peoples may have maintained themselves in a hard struggle for existence, others found their way to the mountains of the old continents, and the first colonisation of the Andean meseta may have taken place at that time in the period of the receding, wider belt tide and the already strongly forming receding flood hills. The formation of the receding flood mounds, like that of the receding belt tide, was a lunar phenomenon. As long as the Earth's rotation far outweighed the orbital velocity of the tertiary satellite, the water masses on the equator were drawn around the ball of the Earth as a ring tide; but when the orbital velocity of the satellite increased as it continued to shrink and became more and more similar to the rotational velocity of the Earth, the waters of the belt tide generally divided into two backward-moving flood hills, which could follow the orbiting tertiary satellite in zenith and nadir. However, long before the rolling flood mounds travelling backwards around the earth formed into sharply separated, retreating flood mountains, an equalisation between the retreating, broad belt tide and the retreating flood mountains took place for a few millennia. Thus, while the flood as a whole was continuous in accordance with the uninterrupted approach of the

As the tide increased near the Earth's satellite, a compensation was created by the ring tide spreading into separate flood hills, and even if this compensation was only an apparent one, it nevertheless had the effect for several thousand years that in inland seas that were connected to the open sea by narrow passages, the level no longer increased on the whole. Such a narrow and winding waterway to the sea formed a natural flood buffer, as we already know it from today's experience, which must have been very effective in the post-stationary and pre-stationary pre-moon periods due to the rapid change in the tide. Seawater entering from the south could only penetrate a few kilometres into the course of the river and lost its damming effect very quickly when the tide capsized, even if the tidal surge was sometimes very high. It was therefore possible for an indistinct beach line to form in sheltered areas of the Andean mountain wall, preferably on the leeward side of the water edge, which gave a blurred indication of the level of the ocean at that time. The lowest of the three beach lines, which Hanns Hörbiger labelled X in his drawing Fig. 11, was probably created at this time. It is therefore possible that the first cult buildings in Tihuanaku and on the plains of the meseta, which is now covered by Lake Titi- kaka, were built at that time, and Posnansky would have been correct if he had assigned a "infinitely old". Perhaps the most marvellous of all temple buildings, the so-called Old Temple of Tihuanaku (figs. 13, 14 and 29), also dates from this time. With the formation of the retreating and finally creeping flood mountains, which always had to follow the approaching moon, it is probable that the Andean highlands were abandoned again for long decades, as the flood mountains also crept around the intervening "spandrels", the spandrels that brought with them the cold of a small ice age that set in each time in the tropics, i.e. a whole series of ice ages that also visited the Andean Meseta in hundredfold successions. According to the world ice theory, the fact that these small ice ages could arise even in the tropics is explained by the fact that the tertiary satellite not only bulged up the tide mountains beneath it and slowly dragged them back around the earth, but that it also did the same with two separate mounds of air that lay piled up above the tide mountains. The areas between the tidal mountains and between the air mounds above them, which interposed themselves as intermediate areas between the areas of the tidal mountains, were therefore to a certain degree of air. This is why ice ages occurred even in the vicinity of the equator, although they did not have the pronounced severity that was the case in the polar and mid-latitudes of the earth. Therefore, when Professor Posnansky identifies several ice ages from the geological findings of the Andean Meseta, which also affected Bolivia near the tropics, this is no mystery for world ice science. However, there were not just two ice ages, but hundreds, which also visited the Andean highlands. And when Posnansky says that his findings at the bottom of Lake Titicaca prove that man had already settled there before the ice age, he is very right, because the world ice theory knows the reasons. Of course, the Andean plateau was not flooded by the receding and creeping flood mountains of the pre-stationary epoch, because before the moon became stationary, that is, before it synchronised with the rotational speed of the earth and moved as fast as the earth rotated, the flood mountains, which constantly followed the moon, were nowhere near high enough to allow even a drop of water to hit the towering Andean mesa. In this respect, the highlands had already proved their worth in the pre-stationary lunar period as an asylum that did not suffer any flooding from the oscillating tidal mountains.

The rest of humanity at that time probably lived in the lowlands between the flood mountains and was pushed around the globe in countless successions without even realising it. There were whole series of generations between the individual stages of visible change in the existing state. It is impossible to imagine the pace of change slow enough, especially in the last decades of the millennia before the satellite became stationary. If the receding tidal mountains took away forests and fields, people probably believed that the land was sinking at this point and moved its habitat back a few kilometres out of necessity, but without realising the compulsion. So they avoided the receding mountain of water and unconsciously moved around the globe many times in many generations. Since the evil of man, if it is not completely eradicated, is eternal, one can easily estimate 50,000-100,000 years for this time.

At stationary time, the time of the one-day month, i.e. the time when the earth rotated as fast as the moon revolved around it, this global migration ceased for long decades. Not only had the living space of humans become frighteningly small, but there was hardly any a patch of earth where it was possible to live reasonably safely and comfortably. In this "mountain-building age", the ice-cold low tide areas in the mid and high latitudes up to the poles were barred to all human and animal access, with the possible exception of birds that raided the beaches. Every day, the "stationary" water mountains of the tidal mountains swung once to the north and once to the south with the cenomonde, showering the high latitudes with their muddy masses of water at each swing. And each time, the ebb tides remained frozen with their mud, with their plant broth from tropical regions, and piled up on top of each other to form sedimentary mountains. And these daily pendulum movements were the result of the angular position of the satellite orbit in relation to the Earth's equator. Since the two planes intersected at an angle, the moon, which was still orbiting and was only stationary or stationary in relation to the earth's rotation, had to make a north-south pendulum movement that corresponded to the amount that the moon had determined in its tropics since its capture.

The high plateau of the Andes had also become cold, as the mild interglacial periods ground their glacial drums here, which we can admire today at around 3000 metres above sea level in the midst of wheat fields under an almost tropical sun and cannot explain, unless we use the engineer Hanns Hörbiger's theory of world ice. The allegedly glacial fillings of the Old Temple of Tihuanaku could therefore also be explained without further ado, should a geologist's investigation clarify this question one way or the other.

Since the habitat had become so scarce at the time of the one-day month, the stationary period of the tertiary satellite, it cannot be denied that the highlands between the Andes were also inhabited at that time, because these small ice ages were in any case still bearable under tropical and subtropical sun and did not prevent the pampas from growing green in somewhat lower altitudes and in sheltered valleys.

And yet it again seems difficult to imagine that the Andean sanctuary could have remained a suitable place for people to stay during such major catastrophes, as it must have been during the one-day month. The devastating floods were certainly absent here. But a terrible guest dwelled on the heavenly mountains of the Cordilleras, especially in those that are now called the Maritime Andes. This guest was the ashfall from the Fire Mountains, whose activity is still a reminder of more difficult times.

As a result of the daily load shifts of millions of tonnes by the northward oscillating large tides of the almost stationary tidal mountains, as a result of the tearing out of deep fracture fissures at the basin edge of the Pacific Ocean by the push and pull forces of the still very slowly creeping backwards tertiary satellite, the earth no longer had the rigid cohesion and thus the impermeability that effectively prevented the access of groundwater and ocean water to fiery magma nests. The collision of the hostile elements must have been possible very frequently at this time of the almost stationary and later fully stationary satellite. This collision must have found particularly favourable conditions at the Pacific rift valley, which is still present and noticeable today. The consequences of this were severe volcanic and tectonic earthquakes of the greatest magnitude and the permanent activity of countless volcanoes, some of which are still extinct today and some of which are still active mountains of fire.

The enormous quantities of lava and especially of whitish ash that must have been ejected at that time are demonstrated with shocking urgency by the truly gigantic deposits of the so-called `Toba volcanica`, of lava ash, which cover the meseta between the Andes. This ash layer, the lowest of two existing ones known to the author, is apparently very uniform, even if it varies in thickness. If there are places, especially in valley incisions, where these ash deposits pile up to 600 metres thick, then these places are probably alluvial deposits. The average thickness of the lower ash sediment is around 6 metres, as can be found at the edge of the Alto La Paz fault, for example.

It is hard to imagine that with such major seismic and volcanic catastrophes, colonisation of the highlands was possible at all. Today, even a much smaller ash fall destroys entire harvests where it falls on the fields, spoils the grass to such an extent that the cattle can no longer eat it, in short, with an ash fall of only a quarter of a centimetre, the farmers in South America are in great need. Is it therefore conceivable that in the case of such ashfalls, as must have fallen on the Altiplano according to the traces, remains of human cultures from the above-mentioned period between the receding belt tide and the receding flood mountains could have been preserved on the meseta and that they could still be found under the

It is difficult to imagine the harshest living conditions for fishermen. However, since conditions similar to those we have described for the Meseta must also have existed in other parts of the earth, which had become oppressively cramped, it can nevertheless be assumed that impoverished people lived in reasonably sheltered areas. Such communities may have existed in small numbers in the valleys of the Royal Cordillera or on the eastern edge of the plateau, 200 kilometres from the main fire-breathing mountains. In my opinion, however, agriculture and animal husbandry were not possible. Only some waters may have been used to catch fish and mussels for food.

And the flats? Here the reader probably involuntarily thinks of the underground dwellings of Tihuanaku, which were at least protected against the worst of the ash rain that fell with varying intensity day after day. This possibility cannot be dismissed out of hand. It has already been mentioned in the first section that these underground dwellings were skilfully secured against collapse by earthquakes. The slabs and building stones were joined together, sometimes with triple tongue and groove (Fig. 54). In any case, this would have provided an opportunity to discover the secret of the miniature underground rooms, which could not have been built so small out of pure wilfulness, but for reasons of expediency. Above-ground rooms without windows, where the narrow and low entrance could easily be secured against the ingress of ash dust, would have sufficed as protection against the ash fall, but such above-ground rooms would have offered no protection against the earth tremors, which at that time were violent beyond all comprehension. By building the interlocking walls into the earth, however, a collapse could not occur even during the most severe earthquakes, so that the stay in these small rooms could evoke the feeling of security that people had to have under such difficult conditions of their unenviable life, at least at night and at mealtimes, if they did not want to despair. For all the buildings that were not built into the ground, strong foundations were used to provide a certain degree of safety against the effects of earthquakes. The 3.25 metre thick foundation walls of the ruins of Siminake, which Posnansky discovered in Lake Titicaca in 1931, appear to have served as such earthquake protection. Posnansky also considers the ruins of Siminake to be pre-glacial and even older than the buildings of the first two Tihuanaku, but not for world ice considerations.

periods. Therefore, if the so-called Old Temple of Tihuanaku (Fig. 13 and 14) was also built into the earth, we now know the probable reason. It was built to protect against earthquakes in this way and no other.

After overcoming the one-day month, i.e. in the post-stationary tertiary period, in which the tidal mountains freed themselves from their stationary position and, following the satellite, now ran forwards around the earth, overtaking the earth's rotation, the forced, but again not recognised and felt as forced, migration of the remaining human remains around the ball of the earth had to begin again. This time, of course, the migration of the people sitting in the spandrels between the advancing tide mountains did not take place backwards around the earth, as it had a hundred thousand years ago, but rather forwards, following the direction of the earth's rotation and the march of the moon and its two tide mountains. Again, numerous small ice ages, which pushed themselves into the spandrels between the two flood mountain calottes in the same direction, replaced the actual floods of the flood mountains. For the Andean Asylum, these flood periods, namely the epochs when the slowly advancing caenomoon stood at the zenith of the meseta and did not want to leave it for seemingly endless times, were not actual flood periods, because the Andean Asylum once again proved to be a real asylum. While the kilometre-high flood mountains rolled from the east towards the Royal Cordilleras in pre-state times, they now did the opposite and ran from the west towards the Andes. As a result, tertiary sediments were able to accumulate on the eastern side of the Cordillera in the slipstream shadow of the waning mountain building period, while they were absent on the western side of the entire Andean massif.

For thousands of years, the tidal fleets alternately anchored over the area of present-day Ecuador and let their enormous wet peaks swing out once a day to the north and once to the south. According to the theory of Hanns Hörbiger vom Welteise, these great floods not only created the sedimentary mountains, but also embedded the coal in the ice-age frost of the northern and southern low tide areas, the raw material of which they took from the tropical regions and carried it as a crushed and ground mass to the sedimentary areas near the poles. At the beginning of the tidal crests' movements, whether retreating or advancing is irrelevant, the oscillating tidal peaks scooped out whole fleets of marine animals and oily seaweed in catchment bays and deposited them in

The ice was piled on top of each other in ice graves in the icy low tide areas, covered them with mud and lime and piled up entire layered mountains in daily, never-ending labour. All the more reason, one might think, for the great floods from the stationary and near-stationary flood mountains to have also fed the Andean highlands in order to store lime, coal and petroleum for today's mankind. After all, the Meseta was directly embedded in the Flood Mountain peaks, so that their southern slopes reached around the two Cordillera slopes as soon as their path took them across the lands of Colombia and Ecuador over thousands of years. With a majestic pendulum swing, one would think, the water mountains had to overrun the Meseta every day and destroy all the ancient temples and subterranean dwellings that existed there, had to pile up marine sediments in a marvellous way, at least in the southern part of the Meseta, and with every return in pre- or post-stage time, they had to destroy and then increase their great work.

None of this has happened.

There are probably marine remains on the meseta in the form of saline lakes, but no marine sediments. The area surrounding Lake Titika is Palaeozoic. The Cordillera is an elevation of plutonic masses, mainly granite, porphyry and tracht, which are joined by gneiss of exceptional thickness, while on the eastern slope the limbs of the Cretaceous and Tertiary periods have mostly accumulated.

The important sediments of the coal deposits are also completely absent on the altiplano. This is no wonder, because according to the findings of the world ice theory, these deposits could only have formed if the ebb tides of the tidal mountains had touched the highlands and deposited the floating matter-laden cargo there, whereupon this cargo would have frozen more or less permanently in the mild frost of a tropical "pinch ice age".

There are also no known petroleum discoveries on the Meseta, and it is also unlikely that productive oil wells will ever be drilled on the highlands between the Andes. Although the basin of the Meseta, which has been deepened between the mountain ranges, seems to have all the characteristics of a good catchment bay in the sense of the world ice theory, such a bay is of no use if the necessary animal and plant cargo cannot get into it.

This brief characterisation of the Andean highlands shows that at the time of the one-day month and in the millennia before and after, i.e. the time when large mountain ranges were being formed by glacial sedimentation all over the world, no such sedimentary mountain building took place on the Meseta. The plateau between the two Cordillera chains, which lies at an average altitude of 4000 metres above sea level and close to the sea level, was therefore neither touched by the Flood Mountains themselves nor by their sediment-bearing ebb tide foothills, at least not in such a way that hardened rock or coal could form under the effect of ice and ice pressure. It is obvious that since the Palaeozoic, the highlands have been practically spared from all "destructive" and "constructive" lunar tides.

The great catastrophes of the pseudo-stationary and stationary periods, insofar as they could affect the Andean highlands, have passed the Meseta by without a trace, in the literal sense. Since the days of the greyest geological antiquity, the Meseta has been a real asylum, a safe haven for people, fauna and flora of the earth even in the hard times of seismic paroxisms during the Flood Mountain Ages.

The deposits of `Toba volcanica`, the lava ash, mentioned repeatedly above, which naturally decrease in thickness from the sea sands towards the Royal Cordillera - for the carriers of the vast majority of active volcanoes at that time were the sea sands - are almost further proof that the floods of larger and more destructive dimensions, such as the flood mountains, could not have affected the highlands. Even the most gigantic, highly piled up flood mountains of the post-stationary, pseudo-stationary epoch were not able to reach the mighty ash deposits, to erode them and transport them to the south in order to freeze them in the form of a sedimentary rock and solidify them through mountain pressure. The Andean Asylum must have remained untouched by all major floods, and the small ice ages - evidenced by the glacial striations described in the first section of this book - which also visited the Asylum must have been numerous in themselves, but individually of relatively short duration and of little geological impact.

Therefore, when Professor Posnansky in La Paz, on the basis of his research

If you think you can read two glacial periods from the face of the Meseta, you are certainly not mistaken, only in reality there were not only two ice ages, or rather mild small ice ages (pinch ice ages), but their perhaps hundreds of them, which moved across the Cordillera with each tidal mountain range, each time following the shifts of the water and air mountains in space and time. The times when the tide mountains were pseudo-stationary (near-stationary), travelling north-south approximately above the 80th degree of longitude, were times of subtropical warmth, as the air bulge lay high above the Andes, and they were followed each time by the small or pinch ice periods with their reduced air cover, which left their traces on the Andean highlands.

There was therefore no need for a shift in a climate belt of unknown origin, no fundamental change in the equator of obscure origin and therefore no significant pole shifts to create such "mild" ice ages in neighbouring areas. Here too, as with all interpretations based on the world ice theory, the force pincers attacked from outside, from the cosmos, and not from the earth itself. For the sake of completeness, it should be expressly noted here that minor changes in the pole position nevertheless occurred, but these displacements, which still seem to reveal themselves today in the position of the magnetic north pole on Boeotia Felix, were minor, but the forces causing them did not come from the earth, but likewise from the tidal force of the tertiary satellite close to the earth, i.e. also from the space of the universe. And it was precisely the push and pull forces of the cenomoonal gravitational field that were capable of shifting even land masses in the zones of distortions, namely distortions that were constantly changing by immense amounts, in such a way that a pole change could take place, albeit to a small extent.

However, these slight pole shifts, which are made credible by the world ice theory, had only a minor influence on the formation of the small ice ages in areas close to the equator, because a complete or even approximate reversal of pole and equator could not have occurred due to the aforementioned push and pull forces of the tertiary satellite. The shifts in the poles caused by these forces could therefore never produce an ice age on the Meseta. This is only conceivable if one considers that the air-dispersed spandrels between the two flood mountains in Zenith and Nadir of the Cenomanian Moon had to sweep around the Andes region during their migration around the globe in exactly the same way as the water mountains themselves and thus also the Cenomanian Moon did.

In order to realise that the two tidal mountains of the pseudo-stationary

Since it was not possible to reach the meseta during the stationary period - the asylum had the cold period of the "interglacial periods" - reference may be made to Fig. 10, which attempts to illustrate the probable position of the oscillating tidal mountains. How the author arrives at the indicated height of the various positions of the flood mountains will be seen later.

The entire highland, the Meseta, is surrounded by a very massive and more than 100 km wide rock barrier, a wall that at no point is less than 500 metres above the level of today's Lake Titicaca. A quick glance at a map of South America, which is labelled with elevations, shows that this wall is much higher at almost all points. There is also a reason why the highlands were expected to be only 500 metres higher:

The lowest height of the barrier is always the most critical for the penetration of external water masses. Nevertheless, the mountain barrier, which has an average height of at least 4800 metres, is a very effective protection even in the presence of rare low spots. In the west, the rock wall of the Seeanden stretches from south to north along the Pacific coast, in the east the chains of the Royal Cordillera rise up, and in the north a huge, almost hundred kilometre wide bar, the Crossing Cordillera, pushes itself in front of the meseta and closes off the highlands in the same direction (Fig. 12). The barrier in the south of the Meseta, at the Chilean saltpetre fields, is not as high as it is in the north, but even here there is a small barrier to the south, so that the highlands between the Andes are actually enclosed on all sides by a towering mountain wall. The southern wall is less important, it could also be missing without depriving the highlands of their status as an asylum against the lunar tides of the tertiary satellite, but it seems to have been of considerable importance for the undisturbed formation of clearly visible and well-preserved beach lines of later epochs of the Cenozoic period.

When looking at Fig. 12, one can already recognise the effective protection offered by the mountain wall around the Andean asylum, namely against the water mountains of the flood mountain periods, as the month lasted only one day or slightly more or less. The maximum, minimum and mean oscillations of the flood mountain positions of the pseudo-stationary period are shown as an experiment. It is not to be denied that maximum pendulum oscillations can also occasionally exceed the mean oscillations.

The Andean Sea, which was already present at that time, was never an option, and such a rush could not have taken place all too often.

Perhaps this statement raises doubts, since the reader is familiar with the flowing force of the tidal mountains from the earlier allusions. Against this, it should be argued that the Flood Mountain peaks were always and constantly *under the pure heave* of the near-Earth tertiary satellite, so that the dynamically so extremely important and effective tangential forces of middle and higher latitudes - thrust and tensile forces in constant alternation - could not come into effect at all. The tremendous effect of the flowing waters lay where the tangential forces were present in the middle and higher latitudes under the pendulum oscillations of the near-Earth satellite and were subject to a constant daily change in direction and position. Where the tangential thrust shifted as a result of the pendulum swing of the cenomoon, the water of the tidal mountains could overtop entire mountain ranges with unimaginable force, as if it had suddenly acquired the ability to flow uphill. And it did indeed acquire this ability day after day.

In the tropics and subtropics, on the other hand, on the walls of the Andes, the tidal mountain peaks only rose and fell majestically, without being released for even a moment from the pure lift of the satellite hovering directly above the summit. The zones of incision, of thrust, lay far to the south and north of the globe and only there did they trigger the effects, the force of which we probably cannot imagine.

Furthermore, it is perhaps even more difficult to understand that the receding floodwaters of the pre-stationary period and the advancing floodwaters of the post-stationary epoch did not periodically wash over the Andean asylum, and it should not be denied here either that splashes from the huge breakers over the Pacific or Atlantic Andean wall could have visited the asylum from time to time, depending on the direction of attack in pre- or post-stationary times. But it could not have been more than splashes - `sit venia` - despite perhaps significant dimensions in human terms.

After all, after the crossing Cordillera, the Andean asylum is safely

The Pacific Ande has sealed off the Pacific Ocean like a giant breakwater to the north. At the lower left end of the sketch map (Fig. 12) the continuation of the mountains is still indicated. The effect of the particularly dangerous post-stationary approaching flood hills had to collapse at this breakwater of the largest dimensions, and the above-mentioned "splashes" powerlessly swirled around the stone giants of the Cor- dilleren peaks of the western Andes, staggered over a hundred kilometres, in order to crash into the Anden Sea in rarer cases. Then there was probably a quite high tidal wave of human scale every time, but the person who built his underground dwelling or his mud hut in the area of this flood possibility deserved to die, namely because of stupidity, which is usually punished very severely. It can be assumed, however, that none of our human ancestors died in such a senseless and suicidal way.

It is therefore easy to see that the safety of the meseta asylum was not so much based on its towering mountain wall, even if it could not be dispensed with, but that to a far greater extent the favourable location close to the equator created the safety, a safety that the caenomoon itself, oscillating almost at the zenith, offered, namely the pure uplift. With an imaginary northern ridge of the entire asylums by only 200 km, the maxima and minima of the Flutberg peaks in Fig. 12 could no longer have been drawn with a clear conscience, as the peak of the Flutberg would have been "flat" in such a case, i.e. it would not have been able to form any clear differences in level during oscillations in the noon line, which could no longer be represented graphically. In my opinion, immediately below the lift of the satellites, the tidal mountain peak followed only the curvature of the globe, it was almost flat, and only there, where the first tangential forces made their effect felt, the water mountain fell first flat, then increasingly steeper to the zones of pure tangential thrust. This first shallower, then steeper slope of the tidal ridge is also the reason why several beach lines on the ocean side of the Pacific Andean seem to approach today's ocean level all the faster the further south they lie.

According to the above explanations, it is therefore not very likely that an occasional overturning of the crossing Cordillera took place at pseudo-stationary times. The untouched nature of the highlands and, in particular, visual evidence speaks against this overturning, and this

Anyone who has stood at Lake Titicaca and seen the ice-capped mountains of the 4500 metre barrier rising into the transparent Bolivian sky in the crystal-clear distance, involuntarily gets the feeling of being sheltered from the great events that might be roaring past beyond the protective Andean walls, when the cenomoon stood in the zenith behind veils of cloud, oscillating southwards and northwards over low latitudes.

If the Andean massif is moved as far south as we tried to move it north above, namely by only 200 kilometres, the asylum as such is called into question. The sloping water mountains, which are already in a fairly effective thrust zone but can no longer be described as flood mountain peaks, would overturn the mountain wall by one to two hundred metres at every pendulum stroke if the Andean mountains around the Meseta were of the same height, because the tangential forces would already exert such a flow effect on the water mountains here in the south that even a higher mountain wall could no longer provide protection. The water would no longer rise and fall vertically against the mountain barrier 200 kilometres to the south, but would flow horizontally, and for this reason alone, its living force and the water rushing in from the north would literally climb the wall and then overturn it. One can see that the asylum in its present location did not need the high mountain walls for its protection as much as its favourable location close to the Gleicher.

One is almost inclined to say that the Andean asylum should not be located one kilometre differently than it is, because the surrounding flood hills, whether backward or forward, would also get into the alternating tangential zones with their southern slopes if they were located 200 km further south, and as a result forces would be triggered here that would literally cause the water to flow uphill. The mountain wall of the Andes would also simply be useless against this temporary outward flow of water. For as soon as the tangential flood force of a large satellite grips a huge volume of water, penetrating through all layers at its depths, it sweeps it along with it, even over mountains, just as, according to the world ice theory, it is capable of heaving entire countries out of their position, only because the flood force at such points does not act vertically but horizontally. It was also far more difficult for the tertiary satellites to lift a load than to push or roll it, in particular if the medium was as mobile as water is.

For the reasons given, it also becomes clear why the author had no qualms about placing the origin of some ancient cult and residential buildings, especially if they were built underground or, like the Old Temple of Tihuanaku, deep into the earth, in the Flood Mountain Period. It is precisely the construction of the Old Temple in the earthquake protection of the natural ground in combination with the use of artificial means to prevent collapse due to seismic shocks that points to its construction during the times of the flood mountains. However, it will also have become clear that such buildings at almost frost-free heights were protected from excessive weathering precisely because they were underground, so that they could survive for any length of time. Only free-standing buildings that are exposed to the constant effects of the weather and destruction by lichen and moss can weather, but not those that remain protected from these effects. Even the storage of a workpiece, such as any work of art, at a depth of about one metre under a covering of impermeable clay, i.e. a normal alluvial sediment from streams and rivers or those of a small ice age, must keep the piece in question intact or at least almost intact, because significant weathering is impossible.

If the tidal mountains of the pseudo-stationary epochs were already unable to reach the Andean meseta or even to feed it with marine sediments, this applies to a much greater extent to the *period of the incipient higher belt tide following the post-stationary epoch,* the crest of which *was unable to reach* the *maximum heights of the tidal mountain peaks again* despite the further rise of the tertiary satellite-induced ocean in equal proximity. The total amount of water available was no longer distributed over two separate flood peaks, but had to *fill the full ring*, which now rolled around the globe at increasing speed.

But even before the ring closed completely, a post-stationary period of equalisation had to begin, a period in which the overall level of the ocean no longer seemed to rise, and this happened in a similar way to the pre-stationary equalisation briefly mentioned above. In particularly sheltered places, in remote sea bays

In the north-west of the world or in large inland lakes with a north-south strike direction and a narrow polar entrance, a period of apparent standstill in the general rise of the earthly ocean could occur.

This epoch seems to have been particularly favourable for *the bay or inland sea of Tihuanaku*, as we want to call the larger Lake Titicaca, because the aforementioned low protective wall of the asylum was also present in the south of the meseta. During this period of post-stationary tertiary equalisation, when the level of the ocean had risen to around 4000 m of today's sea level, the huge Andean lake of Tihuanaku (Fig. 76) stood still for a certain time, for about one to two thousand years, without any significant fluctuation in the level. While the flood peaks outside the asylum spread out into long trains because they could no longer follow the advancing satellite as separate flood peaks, and while the ring tide levelled out and filled up in return, the level of the inland sea of Tihuanaku stood firm, and the small amounts of flood water that wanted to penetrate with fluctuating levels from the south through the narrow access to the saltpetre deserts of Chile were effectively intercepted on narrow, winding paths.

At the same time, however, the repeated periods of small ice ages in the spandrels between the tidal mountains had completely ceased with the flattening of the tidal mountains on the Meseta. The Cenomanian Moon orbited the Earth's sphere in about 20 hours today - so the year had several hundred months! - and just dragged the remains of the great flood mountains behind it in a long distortion around the earth. Since the level of the larger sea of Tihuanaku was now at the same level as the ocean, but also close to the equator, the climate of this whole area had to become a sub-tropical one, indeed a fully tropical one due to the favourable location of the sea. This consideration explains the findings of the various explorers on the highlands of the Andes, which prove that the remains of a tropical fauna and flora can still be found on the Meseta today. The former existence of a genuine, undiminished tropical flora and fauna at the time when the larger Lake Tihuana was at sea level is therefore no longer a mystery.

During this important period of tranquil development in the Andean highlands, the human cultures, which had been struggling to survive in the subterranean dwellings of the Meseta, also had to develop.

The human race, which had held on to the power of the earth, could develop to great importance in just a few centuries. It was precisely this humanity, steeled by thousands of years of severe hardship, which was able to enter a time of peace and abundance, that was able to create what it actually created within the short period of a few millennia, namely the empire of *Tihuanaku and its eponymous capital*. Even today we can still see the shoreline of the sea at that time (Fig. 8) running along the granite walls of the shore mountains, and it is no longer a mystery to us that this shoreline `Y,` which was levelled by Posnansky in 1926, no longer *runs* horizontally for our modern measuring instruments and for our modern sense of balance, but *crookedly, falling from north to south!* This beach line means nothing more than the boundary of what was once a naturally completely horizontal lake, a lake that would have been horizontal for our measuring instruments at the time. On the whole, it only corresponded to the southern slope of the flood ring embankment, which *had to fall* as a result of the tangential forces increasing towards the poles, until it reached its final position at about 30th southern latitude disappeared into the ice of the middle and higher latitudes.

The inclined beach line `Y` has thus revealed its mysteries. It was only a miracle as long as it was not clear how it could have risen to such a significant height. At first one had to come up with the idea that it could not be a shore mark of an ocean that had risen so high, but that it must be that of an inland lake whose basin, together with the continent, had tilted for some reason. And this is also understandable, that for lack of better explanations, the temporary hypothesis of melting ice was used to explain the strange tilting movements of a giant continent in several repetitions.

However, no tilting of the mainland massif was necessary to skew the beach line, and no uplift of South America in the north and subsidence in the south was necessary to make it possible, nor was any force resting in the interior of the globe and suddenly or slowly released required to lift the mainland horst to the present sea level of around 4000 metres, so that the skewed beach line and the salty sea remains would be in the position in which they are today. Nor was it necessary for the Andes Sea and its meseta to rise to even higher altitudes in order to make the ice ages recognised by Posnansky possible, and that he

The meseta sank back down to today's sea level to enable the marine fish fauna that otherwise only lives in tropical seas. What is now wasting away on the rough meseta are remnants of tropical fauna and flora, as seahorses are otherwise only found in the waters of warm seas.

All the climatic fluctuations that we can recognise on the highlands by unmistakable traces between the approaches were therefore not caused by vertical displacements together with repetitions of obscure reasons, but rather the small ice age of the spandrels lay logically alongside the subtropical to tropical climate on an unchanged mainland horizon, The small ice age of the spandrels on an unchanged continental habitat logically occurred alongside the subtropical to tropical climate, following each other in time and space in multiple, even hundredfold repetitions, without any other force being responsible for this than that of the *tertiary satellite and its constant approach to the earth as a result of the intraplanetary space resistance in the cosmos.* Here, too, the force underlying all the phenomena mentioned did not come from the earth itself, but solely from space.

Since the climatic conditions at the time of the formation of Tihuanaku Lake were very favourable for both flora and fauna, as well as for humans, it is no wonder that the ruins of Tihuanaku stand on the shores of this former inclined lake. Suddenly the city on the sloping lake no longer holds any secrets, unless the *cautious* scientist is still reluctant to ascribe such an old age to a cultural centre like Tihuanaku, even if he has to admit that the explanations based on the theory of world ice are flawless, i.e. that the world ice theory has been correctly applied as a working hypothesis. After all, according to experience, he is reluctant to calculate with age figures that exceed 10,000 years. And the age figures that emerge from Tihuanaku must seem downright monstrous and therefore unbelievable to him. The age of Tihuanaku cannot even be given in years by the world ice theory, not even as an estimate, but only in relative values of satellite times. However, we do not know how long the individual satellite ages lasted, we do not know, for example, whether the period of "equalisation" between the advancing flood mountains and the advancing belt high tide, i.e. the time of the construction of the city of Tihuanaku, lasted 1000 or 2000 or more years, nor do we know whether the long moonless period between the rupture of the tertiary satellite and the capture of our moon, Luna, counts for millions or only for hundreds of thousands of years. One but we know and will only with great difficulty be dissuaded from this conviction, even if the age of Tihuanaku cannot even be estimated, that it must in any case count for millions of years!

It takes courage and a thick skin to claim such things in a book that wants to be taken seriously and, as the author, to bear the silent contempt or the characteristic smile of the specialists. Fortunately, however, it seems to have been ensured that the evidence based on the world ice theory does not remain without further considerable support. If the city on the inclined lake has not yet convinced you that its origin must be placed in the post-stationary period of the Cenomoon Age, if the mystery of this city and its inclined lake is to be solved at all, you may read in the last section of this book the literal confirmation of this city's foundation in the time of the "equalisation" from the ideographs of the *Sun Gate.* Perhaps, the author hopes, this confirmation will silence even the sceptics who are not satisfied with the proof of the formation of the shoreline in this second section on a glacial-cosmogonic basis and who do not want to use Hanns Hörbiger's theory even tentatively as a working hypothesis.

The fact that the prehistoric inclined shoreline Y of Lake Tihuanaku also lies on the banks of the Desaguadero and its peripheral mountains has already been reported in the first section. Here, however, Professor Posnansky was able to prove that at the time when Tihua- naku flourished, there were large animals on the Altiplano which, like the giant tortoise, are tropical animals. Since Professor Rudolf Hanthal and Dr. Ivar Sefve excavated large mammals from the red mud of the lake at Ulloma from Tihuanaku layers, which were therefore contemporaries of Tihua- naku, this is probably sufficient to show that, without any imaginary constraint, climatic conditions were and must have been favourable to the existence of such tropical animals as the seahorse and the giant tortoise at the inclined lake, which was at the level of the ocean at that time. The flying fish, the typical inhabitant of our warm oceans, must also have been present in the sea of Tihuanaku at that time, as it is depicted on the Sun Gate, and so faithfully that the sculptor probably not only saw his model frequently, but also fried it in the pan. The presence of tropical fauna together with the highly cultivated people of the city of Tihuanaku is therefore no longer a mystery. The sea level at that time under the tropical sun provided favourable living conditions for these animals without the continent having to sink to today's sea level.

The explanation offered by Hanns Hörbiger's world ice theory has one great advantage, namely that of uniformity. All the phenomena and conditions on the Altiplano that were presented as unexplained in the first section of this book can be interpreted by the one force that led to the creation of the various conditions in geological, climatic, palaeontological and even archaeological terms. Taken out of this context, it is possible to find explanations of various kinds for different and individual conditions and phenomena, but all of them seem to the author to suffer from a serious flaw, namely a lack of unity. Complicated explanations are always more questionable than simple ones. And simplicity is often supposed to be the criterion of truth.

In the constant succession of interpretations of many mysteries from the Meseta Bolivi- en and Peru, the mystery of the harbour city on solid land at almost 4000 m above sea level is now also dropped. Tihuanaku was able to use its harbours without any problems. The water did not flow out of the sloping lake to the south, as would be the case today if an attempt were made to fill the lake basin. For thousands of years, namely during the period of the equalisation of post-stationary high tides with the preceding post-stationary higher belt tide, large seagoing ships left these harbours and returned to the city from afar. At the time of the inclined lake, this inland sea not only had the already considerable extent of today's Lake Titicaca of around 200 km in length and around 80 km in width, but was perhaps no less than 1100 km long with a width of around 200 km and was teeming with islands and islets (Fig. 76). The shores of the lake and the islands, however, provided scant space for a population of millions, and this large population was forced to draw its livelihood from the arable terraces described earlier, which cover the fringing mountains of the highlands in hundreds of steps one above the other. And if you take the depth and length into account, as there is hardly a place in the Andes mountains that is free of these terraces, you get an idea of how densely populated the country must have been at that time.

It is no wonder that this was the case. After all

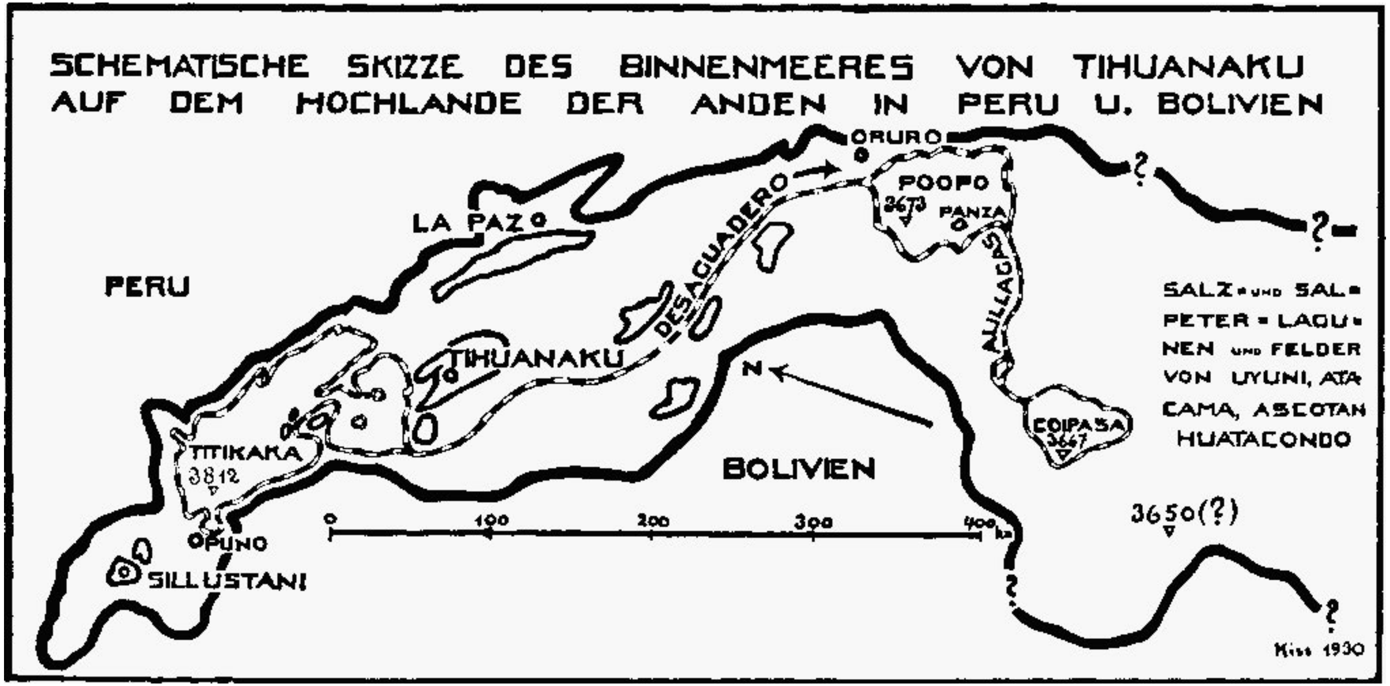
SCHEMATISCHE SKIZZE DES BINNENMEERES VON TIHUANAKU AUF DEM HOCHLANDE DER ANDEN IN PERU U. BOLIVIEN
PERU
LA PAZ
ORURO
POOPO
3673
PANZA
DESAGUADERO
AULLAGAS
TIHUANAKU
TITIKAKA
3812
PUNO
SILLUSTANI
N
BOLIVIEN
COIPASA
3667
SALZ- UND SAL-PETER-LAGUNEN UND FELDER VON UYUNI, ATACAMA, ASCOTAN HUATACONDO
3650(?)
0
100
200
300
400 km
?
Kiss 1930

Fig. 76 Sketch of the approximate boundary of the inland sea of Tihuanaku. The southern boundaries have not yet been determined, hence the question marks in the heavily drawn outline on the right. The boundaries of today's Lakes Titikaka and Poopo, as well as Desaguadero and Coipasa are shown as dashed lines.

At the time of the post-stationary "equalisation", i.e. at the time of the inclined beach line Y (Fig. 8) on the highlands of the Andes, almost all the remnants of mankind on the whole earth were concentrated in the small area of the Meseta, the safe asylum within the mountain wall of the Cordilleras. The hardy and hardy people who had managed to survive on the cramped earth and had escaped the destruction of the great catastrophes of the Flood Mountain Ages in the fierce struggle for bare life, now sat in the asylum of the highlands and utilised the respite that the tertiary satellite offered like a breathing space in the advancing destruction. The rest of the earth, with the possible exception of the Abyssinian mountains near the Gleicher, was almost uninhabitable because the higher belt tide covered the rest of the tropical countries and, with unpredictable pendulum swings, also endangered the shore areas of the higher latitudes, where there was only a narrow zone for hunters and nomads to eke out a hard and privation-filled existence. After all, the leading ring tide of the post-stationary period came almost directly up against the areas of polar and sub-polar glaciation, which in the northern hemisphere of the earth must have reached as far as the latitudes of the Mediterranean.

And in one place on earth there was an asylum surrounded by mountains, a refuge that was not only safe from natural disasters, but also had a pleasant climate! Rich tropical and subtropical vegetation and the same fauna flourished and lived on the shores and islands of the fish-rich lake. And how rich in fish it must have been is not shown by the small and rare fish that the Indians catch in Lake Titicaca today, but by the discovery of several fossilised orestias (fish) of impressive size. They were about five times larger than the fish that live in Lake Titicaca today. These fossilised fish were unearthed by a German engineer while digging a well near Tihuanaku. Since another town of clear Tihuanaku style, located about 15 kilometres north of the metropolis near the Bolivian port of Guaqui above the inclined beach line, can still be seen in ruins today, and other buildings in Tihuanaku style can also be found elsewhere above the Y beach line, it is likely that the entire Meseta was densely inhabited. The cultural level of a people is usually expressed in their buildings. If the people of Tihuanaku are to be judged by their buildings, they can only have been a people of unusually high education and good artistic taste. In particular, the grandeur of the

The building spirit should be emphasised. The Kalasasaya, the Mausoleum of Puma Punku and also the Palace of Sarcophagi are reminiscent of the best creations of classical times. In this context, reference should be made once again to Figs. 27-36, 51, 62-75, which should give an idea of the fact that the large buildings found are pure luxury creations. In keeping with the tropical climate, they were also open, low buildings, designed to accommodate a number of visitors similar to our large stadiums and open-air theatres.

As Tihuanaku was situated at the height of the sea level at that time and also close to the equator, it is understandable that the farmers' terraces could extend to the highest peaks of the mountain giants, which at that time were naturally quite low mountains and hills, corresponding to the height of the sea level at that time. These mountains were ice-free and the terraces were therefore suitable for cultivation. And if today on the ice-covered giant Illimani the agricultural terraces disappear under the ice at an altitude of 5600 metres, this does not mean that it must have been the same back then. On the contrary, it is certain that the mountains Sorata, Illimani, Iliampu and others, which were only 2-3000 metres above sea level at the time, were also ice-free under the dense, towering bulge of air that the kenomoon drew up towards itself. The climate on the summit of Illimani was still favourable for the ripening of maize and wheat.

On the shallow shores of the sloping sea, however, in the area where the city of Oruro in the country of Bolivia is located today, where the Sun Island in Lake Titicaca lies today, the calcareous algae grew in hundreds of quiet bays, Their descendants still thrive today on the shores of Lake Titicaca, and over the course of some two millennia they allowed the lime from their dead plants to sink to the bottom, where it accumulated and solidified in layers several metres thick and extending for kilometres. On less stoked and steeper shores, the restless surf gnawed at the rocks, and the rivers and streams poured delta-shaped alluvial sediments into the lake, which even today are not completely obliterated, but run like a horizontal band across the slopes when viewed from a distance, even in these places betraying the boundaries of the ancient sloping lake.

At this point, namely at the most important period in the history of the development of the great Andean lake of Tihuanaku, a short pause must be made with regard to the remarks in the third section of this book, in order to clearly emphasise the conditions that existed at the time of the creation of the lake.

The Andean metropolis of Tihuanaku and its harbours were built in astronomical and calendar terms. We use a drawing no. 533, which Hanns Hörbiger made in 1927, to approximate the conditions of the post-stationary period of the tertiary satellite age (Fig. 88). In order to understand the overall plan of events from the beginning of the cenomoon to its dissolution, please also study Hanns Hörbiger's drawing No. 531 (Fig. 87).

In Fig. 88, a stage 24 has been marked with a thick circle, i.e. the stage that clearly shows the post-stationary equalisation between the upstream flood crests and the upstream high ring tide.

According to the legend for stage 24 in the left margin of Fig. 88, the duration of the day was T = 29.4 hours (*today's hours*). This means that the days of the equalisation period of the Y strandline and the harbour city of Tihuanaku had a longer duration than is the case today, because today the day has 24 hours, but not 29.4 h. The days of the post-stationary tertiary equalisation between the advancing flood mountains and the advancing belt high tide were therefore not inconsiderably longer than today, and there was a valid reason for this. The period of stationary time, that of the one-day month, had not yet been over for too long, and up to this stage of the stationary moon and the stationary flood peaks, the satellite had only slowed down the rotation of the earth because it was running backwards, rather lagging behind the earth's rotation, and had thus also dragged the huge water mill of the earthly ocean backwards around the earth. This backward dragging, however, was tantamount to braking the Earth's rotation for long decades. The rotation of the earth had therefore slowed down, and as a result the days had become longer and longer. After overcoming the stationary age of the moon and tidal mountains, the opposite occurred. The tertiary satellite continued to approach the Earth and, according to Kepler's laws, had to constantly and continuously increase its orbital speed. From now on it dragged the Earth's water masses *forwards* around the Earth, overtaking the Earth's rotation. Even if this only happened slowly at first, and the driving effect on the Earth's rotation therefore only remained slight, the effect increased from millennium to millennium and by the time of the often-mentioned equalisation stage had already achieved considerable success. However, they were by no means sufficient to replace the braking losses of decades and decades of the pre-stationary period. The time of effective rotational propulsion was still to come for the earth, namely in the following tents of the upstream ring water mill of the high belt stream. But it wasn't that far yet. The days of the post-stationary equalisation were still quite long, namely 29.4 hours today, and today's 24 hours were only reached much later.

Since the number of hours in the solar year, calculated in *today's* hours, was 8760 hours then as it is today, it is clear that in the equalisation period of the Tihuanaku period the tertiary solar year must have had 8760 : 29.4 = approx. 298 days and not 365 days, as is the case today. The Tertiary days were only individually longer than today, but they merged into the solar year, which must have been practically the same as today's, just as our shorter days do today.

While the lengths of the days were already completely different from ours, the moon's orbit in the solar year showed even greater differences compared to today. In modern times, the moon Luna orbits the Earth's orbit about thirteen times a year, but at the time of the Y-strand line it orbited far more often! The legend in Fig. 88 shows us the duration of the cenomoon's orbit around the Earth in today's hours, namely in stage 24, the period of the Tihuanaku equalisation: Mt = 19.6 h (*today's hours*). This means, however, that the cenomoon in the twelfth of the year, which we did not know well at that time, was
"month", as we inaccurately call it today, orbited no less than 37.2 times and 447 times in the solar year! At a distance of *only about 6 earth radii* (R = 5.9 r of the legend of stage 24 in Fig. 88) *from the earth,* the inhabitants of Tihuanaku must have experienced about 200 solar eclipses per year, because the sun had to eclipse almost daily at such a close proximity to the earth.

To summarise, the conditions of a calendrical nature at the time of the tihuanaku equalisation of beach line Y are mentioned once again:

1. *Daily duration about 29.4 hours today.*
2. *Number of these days in the solar year about 298.*
3. *Cenomoon orbits in the twelfth part of the year around 37-38.*
4. *Cenomoon orbits in the solar year about 447.*
5. *Solar eclipses in a solar year about 200.*

After this short stop, which we made to clarify the calendar states of the Tihuanaku equalisation period, we leave for the time being the time of the inclined Y-strand line and its ancient metropolis and devote some more brief observations on the further development of the Andean highlands and its sea.

The second hand of the cosmic clock, which is known to count seconds by millennia, continued to beat, and Tihuanaku became a legend faster than the lords of this proud city on Lake Andes could have dreamed. This probably happened without any catastrophe. The lake simply began to rise, and we know from what has been said so far that it rose again, which may not have been known at the time, because the period of several thousand years of deceptive equilibrium was over. It was probably said at the time, as it would be today, that the foundations of the harbour piers and the large buildings erected close to the surface of the sea were beginning to give way and sink. The harbour area of Tihuanaku sank into the water, the buildings of the lower town became unusable, they were abandoned, and then people may have stayed in the higher parts of the town for a while. The high terraces of Puma Punku also sank deeper and deeper into the rising waters of the lake. The mausoleum hall, which was initially about 11 metres above the water level of the harbour when it was built, was finally enclosed by the tide (Fig. 77). And apparently, at the time when the Spaniards conquered High Peru, there was still an ancient legend, which the chronicler Diego de Alcobaca relates, that the lake once washed up against a wall of the Hall of Puma Punku.

In any case, the lake rose very slowly at the beginning because the last centuries of levelling still had to be overcome. The limestone algae mentioned earlier must have settled on the floor of the Kalasasaya, because the steps and the platform of the eastern portal of the Kalasasaya (Fig. 23) are covered with a thin layer of limestone deposited in the water. This indicates that the solar observatory has stood in shallow water for a long time, for several decades.

As the Tihuanaku Sea continued to rise due to the uninterrupted approach of the moon, the inclined beach line also disappeared under the mirror of the sea, which was preparing to finally overcome the mirror height of the post-stationary time of the equalisation of the stationary time, albeit slowly, but all the more safely.

It can be assumed that the inhabitants of the highlands did not give up the struggle for survival despite the loss of the town, but instead turned their stepped fields into

They were able to live in ever higher mountainous regions in order to utilise the last remnants of land that fate had left them to produce their daily bread. They could not suffer from a worsening climate, because the sea, sucked up by the cenomoon, which was shrinking ever closer to the earth, was rising and tended to further improve the climate, creating an almost tropical climate even on the highest peaks of today's Cordilleran giants. What the rising sea took away from their habitat was replaced by the growing warmth for plant growth. The inhabitants of the sea, the fish and shellfish, may also have retreated into the quiet giant bay of the ocean, which the sea on the Meseta had become in the meantime, during these ever shorter days. However, the constantly rising sea gave neither time nor opportunity for the development of a new civilisation with giant buildings such as those of Tihuanaku.

The cenomoon shrank closer and closer to the Earth in the inner planetary space medium, the giant satellite orbited the enormous sphere of its master faster and faster, and higher and higher.

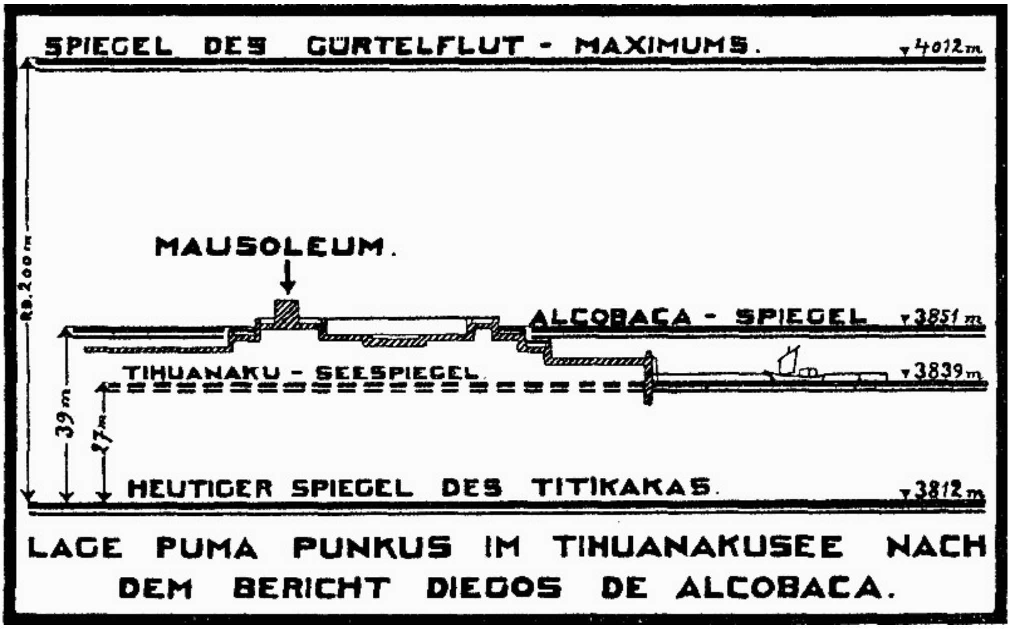
SPIEGEL DES GÜRTELFLUT - MAXIMUMS.
4012m
MAUSOLEUM.
Rd.200m
ALCOBACA - SPIEGEL
3851m
TIHUANAKU - SEESPIEGEL.
3839m
39m
27m
HEUTIGER SPIEGEL DES TITIKAKAS.
3812m
LAGE PUMA PUNKUS IM TIHUANAKUSEE NACH DEM BERICHT DIEGOS DE ALCOBACA.

Fig. 77: Schematic representation of the different heights of the Tihuanaku sea level in relation to the upper edge of the third terrace of the mausoleum of Puma Punku in Tihuanaku.

the sea rose. And when the time of the independent existence of the tertiary satellite was about to be fulfilled, when it was only a matter of a few millennia that it had to break down on the earth's shell, torn apart by the tidal pull of the earth, the last opportunity was given for the formation of the last shore mark of the fully pumped tertiary Flood basin to take place. Fig. 11 designates this last strandline, which also slopes from north to south above the Y strandline, as Z. This Z-line is naturally not as distinct as the Y-line, nor can it be. In contrast to the Y-line, the uppermost strandline Z did not receive a deceptive pause for its formation, but rather owed its formation to the slower filling of the highly dammed Flood basin towards the end of the Cenomoon period. In reality, the Z-strand line is not a line with burning hollows and firmly cemented limestone bands, rather it is very blurred and unrecognisable in places. Instead, it has helped itself in other ways to make it easier to recognise. In the relatively quiet and sheltered bay of the Andean Asylum, the abundance of shells, namely common pile shells, seems to have been very high. It has already been pointed out in the first section of this book that such ordinary pile shells lie in almost inexhaustible abundance on the uppermost strandline Z at an altitude of around 4300 metres under the open sky, so that they can still be fished away today to be used in a small-scale Indian industry to burn lime for masonry. Since they could never come under any kind of pressure or into a layer that would wash or press them together into a limestone mass, they have simply remained there to this day. Large stretches of this shell horizon of the mountains above the Meseta may still lie buried today, as they were all covered by mud for a certain time, but were soon partially washed free by rainfall.

The last blast of fire gnawed at today's towering mountain heights
The line of the last high tide mark of the Cenomoon Age and created the broad, eroded, partially exposed upper beach line, which is still visible today as the Z-line of Fig. 11 on the slopes of the shore mountains of the former great sea of Tihuanaku. It is the line that shows a gap in the south, in Argentina and Chile, indicating that it did not once border a lake but a bay. The gap in the strandline of the Z-line is now also visible under the illumination of the theory

Hanns Hörbiger's theory is no longer a mystery, which it is and must remain for today's science and its theory of continental uplift and subsidence. No uplift or tilting of the continent of South America was necessary to form this last and uppermost strandline. No vertical movement and no tilting created it, but only the asymptotic filling of the Flood Basin, caused not by an unknown force rooted in the earth or by an insufficient force such as ice pressure, but by the enormously increased tidal force from the cosmos, which shot around the globe in a few hours as a tertiary satellite and defended itself with a final increase in speed against the inevitable collapse onto the earth.

Presumably the last humans of the tertiary satellite age had hidden themselves in caves on eastern mountain slopes in those difficult days shortly before the end of a lunar age in order to be protected against the roaring storms that raced around the globe. Presumably the ring of air that enveloped the earth on the equator had also begun to rotate and was trying in vain to follow the cenomoon as it swept rapidly over the earth's surface. And so the last few days on the "asylum" of the Andes may not have been particularly pleasant either, especially as a constant flitting alternation of dull, cloud-shrouded brightness and pitch-black darkness of sun and cenomoon did not allow any real joy of life to arise. It can be assumed that the people of that time knew that a terrible catastrophe was imminent. And as slowly as the cosmic clock struck, the time came when the cenomoon, blown apart by the tidal force of the earth, fell apart. The first hailstorms of a centimetre's weight pelted the asylum, and in a few weeks the caenomoon had scattered its last debris over the earth's surface. At the same time, however, the bay of Tihuanaku began to drain away like a torrential flood and began to fall with great speed. With the disappearance of the keno moon, the flood train that had dammed up the water masses of the earthly ocean up to mountain heights also ceased, and the water flowed torrentially towards the poles. The rain of mud that had fallen from the sky in endless masses on the sea floor of the tertiary satellite mixed with the waters of the draining lake and was for the most part washed away with the deluge that also flowed into the asylum. What was left of the lunar mud after the Andean lake of the Meseta had drained away was washed away by the rainfall from the mountain slopes, and the rest remained on the Altiplano to this day. The more massive tertiary debris, the ore and metal mountains, however, could not be washed away, they sank immediately when they fell into the draining lake, and today they lie partly exposed on the plain, as if they had not even collapsed there with such great force. Presumably the water of the sea has greatly reduced their speed of fall. An entire "conglomerate mountain", as Posnansky calls it in La Paz, can also be admired on the Meseta, a mountain similar to Nagelfluh, with the important difference that this Nagelfluh mountain is melted and sintered on the outside. This mountain lies in the middle of an alien environment. The soil of the meseta consists of sand and gravel down to unknown depths, with only a covering of hard pampas grass here and there. The conglomerate mountain with the melted crust rests there like a strange stranger, but one searches in vain in its surroundings for traces of the effects of fire; it lies directly in and on the intact gravel of the former seabed. I conclude from this that the mountain ploughed through the air like a giant meteor at the dissolution of the foremoon, became red-hot on the surface due to friction and then plunged into the Tihuana Sea. The water, however, slowed down the force of the fall to such an extent that the mountain could no longer penetrate too deeply into the seabed and reappeared after the sea had receded.

The above-mentioned shell horizons at the uppermost strandline Z (Fig. 12) were also temporarily or permanently buried; clay silt also sank through the falling level of the Tihuanaku Sea onto the old metropole between the Andes, which had been sleeping safely on its bed for many decades, and subsequently covered it. This did not happen high up in the mountains. The lake was in motion! Not only was its level falling, but its water was also beginning to flow southwards. For even though the outflowing deluge was rushing unrestrainedly over the lands of the rest of the world, the Andes Lake was not in quite such a hurry. It too had to flow southwards, but the outflow openings were not so large that it happened with a catastrophic force that destroyed everything. Bays cut far into the mountains had to empty themselves, including that of Ti- huanaku, and it was nowhere near as fast as the World Ocean flowed towards the poles. Nevertheless, a strong current certainly arose, which carried the main part of the collapsed clay mud from this area with it.

and as the water drained away faster when the heavy core masses of the tertiary satellite broke down, the old city was already dry on its now actually and definitively sloping shoreline. However, it was highly covered by the grey clay mud of the cenomond ocean floor and rested safely and securely under this protective layer.

On the Meseta, the great sea of Tihuanaku had disappeared, but had left behind in some depressions those sea remains that could not drain away because of the mountain barriers, and these were essentially the same water accumulations that we see today on the highlands between the Andes at around 4000 metres above sea level, namely the lakes Umayu, Titikaka, Poopo, Coipasa, Uyuni, Atakama and Askotan.

All these lakes, which were very probably only a little larger than they are today, now each had a mirror level that corresponded to the dawn of the moonless age, i.e. was hardly noticeably different from today. But it no longer matched the former horizons of the old Y and Z shorelines, and the masses of water that had once filled them would no longer have fitted into the old boundaries, even if the amount of water had allowed them to be filled again. We need only recall the thought experiment from the first section of this book to realise immediately why the mirror plane of the now existing marine remains must have a different horizontal than at the time of the tertiary satellite.

Based on Hanns Hörbiger's theory of world ice, it is now clear why the great lakes of the Meseta have salty water and why they harbour a fish fauna that is the same or similar to that of the warm oceans. It can no longer be completely the same after such a long-lasting climate change has completely altered the living conditions of tropical animals. A degeneration of the fauna must therefore have occurred, but this could not prevent it from being recognised as tropical or subtropical.

And so the greatest mystery of the high-altitude Meseta, the presence of salty marine remains at lofty mountain heights of around 4000 metres, is no longer surprising. The oblique beach lines X, Y and Z in Fig. 11 tell us in brief words how they were formed, and the salt lakes now indicate the heights at which the cenomon-driven terrestrial ocean once broke against granite walls. They explain the riddle that they once posed to us, why next to marine remains with marine fauna and flora cannot occur on the highlands between the Andes, why the environment of Lake Titicaca *must be Palaeozoic*.

It is difficult for the author to believe that the argumentation of this section could meet with too strong a contradiction precisely because of its consistency and uniformity. And even if the specialist were to discover inconsistencies in the details of any of the areas touched upon and wanted to make serious accusations, the request is made to appreciate the overall picture and not to condemn and reject it in cumulo because of individual errors, which have certainly occurred, but to try to restore the general line on the basis of better knowledge in individual questions, but not to reject the overall result immediately. In one respect, the scientific critic will be in the same position as the author. He, like the author, will have mastered only one field of all those discussed in this book, and will therefore, like the author, *be a layman in most of the fields discussed*. The science of our modern age is a specialised science. The geologist is seldom or never an archaeologist, the astronomer seldom or never a palaeontologist, the zoologist not an architect. The difficulty of this book lies precisely in the fact that the problem of the Andean meseta is a universal and not a specialised one. No one can solve the mystery of the Andean lakes and the Palaeozoic structure of their environment with exact geological knowledge alone. Therefore, in his judgement of the present remarks, he must not hide behind the statement that he understands nothing of the other disciplines. After all, the lack of exact expertise in almost all of the areas covered has also weighed heavily on the author. No amount of diligence in a human lifetime can impart the knowledge that would lead to a commanding mastery of all the specialised fields mentioned in this book. The author therefore had to confine himself to merely outlining his view of the formation of the Andean Sea and its sloping shorelines, together with the Andean metropolis of Tihuanaku. Whether this type of presentation stands up to scientific scrutiny is a question that cannot be answered here. Let criticism enter into the examination, namely into the examination of the main part of this book on the inclined lake of Tihuanaku and its metropolis, into the examination of the interpretation of the ideographs of the calendar frieze on the sun gate of Tihuanaku, which is to be brought in the last section of the book.

III

The Sun Gate of Tihuanaku An attempt to unravel its ideographs

> For an age I have been seeking to penetrate the secrets of this continent and its prehistoric metropolis, but not by the width of a fingernail have I succeeded in penetrating its depths.
>
> Professor Arthur Posnansky, La Paz 1928.

D he words that precede this section on the unravelling of the ideographs of the so-called Sun Gate of Tihuanaku characterise the difficulties that confronted the researcher in La Paz as he attempted to interpret the riddles presented to him by the prehistoric city on the sloping lake, using almost his entire life's work. The scholar spoke these resigned words in his Tihua- naku Institute in Miraflores as he sat by the fireside with the author of this book on a December evening in 1928. The lonely German researcher in faraway Bolivia had had a cast of the sun frieze mounted above the fireplace so that he could always have it before his eyes. And at that time, Mr Posnansky, whose knowledge of Americanist matters is extremely extensive and who can almost be regarded as an authority on Tihuanaku matters, confessed, that despite thirty years of work, it is still in its infancy.

At that time, this word of the stick in the beginnings referred primarily to the content of the calendar frieze of Tihuanaku, which is carved on the Sun Gate and is still awaiting interpretation. Although Posnansky has found and published an interpretation, and this interpretation will be briefly presented below, the researcher in La Paz is also aware that his interpretation is incomplete.

In contrast, the author of this book believes that he has found problems in what has been worked out by others, not least by Professor Posnansky.

which, when illuminated with a new kind of spotlight, seem to abandon their problematic nature. Therefore, the reader should not expect any new finds and discoveries of an archaeological nature in this section on the Sun Gate in Tihuanaku, but merely the presentation of a different, hitherto unpractised method of clarifying and explaining the available factual material.

Therefore, may the proposal of an interpretation of the ideographs of the Sun Gate on a different basis than has been applied so far find friendly and, in particular, patient ears. Patient ears because the reader is required to familiarise himself with lines of thought that are completely new, but whose knowledge is indispensable for understanding what is being presented. If this requirement is met, the author believes and hopes that he will be able to awaken in the reader the deep amazement that gripped him when he thought he was reading the ideographs of the famous Sun Gate for the first time.

The object itself is at least vaguely known to a wider circle of readers, for the famous Sun Gate of Tihuanaku has been repeatedly drawn and illustrated in many an illustrated magazine and in almost every travel book describing Bolivia's artistic treasures and antiquities (Figs. 31 and 32). Rarely or never, however, has a serious attempt been made to decipher the enigmatic pictorial writing, and as far as the author is aware, only Professor Posnansky in La Paz has dared to publish his views on the interpretation of the sun gate frieze after the study of a lifetime. This is probably why only the researcher in Bolivia deserves the honour of having shed some light on the mysterious signs.

Nobody knew better than the scholar in Bolivia that there were seemingly insurmountable difficulties in deciphering the pictorial script, and his sigh that after more than thirty years of research he had not penetrated the secrets of the Andean metropolis of Tihuanaku by a fingernail's depth also applies in full to the Sun Gate. Even though he now believes that he has found the interpretation of the hieroglyphs after the long time he has devoted to this very subject, the unravelling of the Sun Gate frieze, he knows very well that many things have remained obscure and must be left to his successors to clarify.

Before discussing Professor Posnansky's attempt at an interpretation

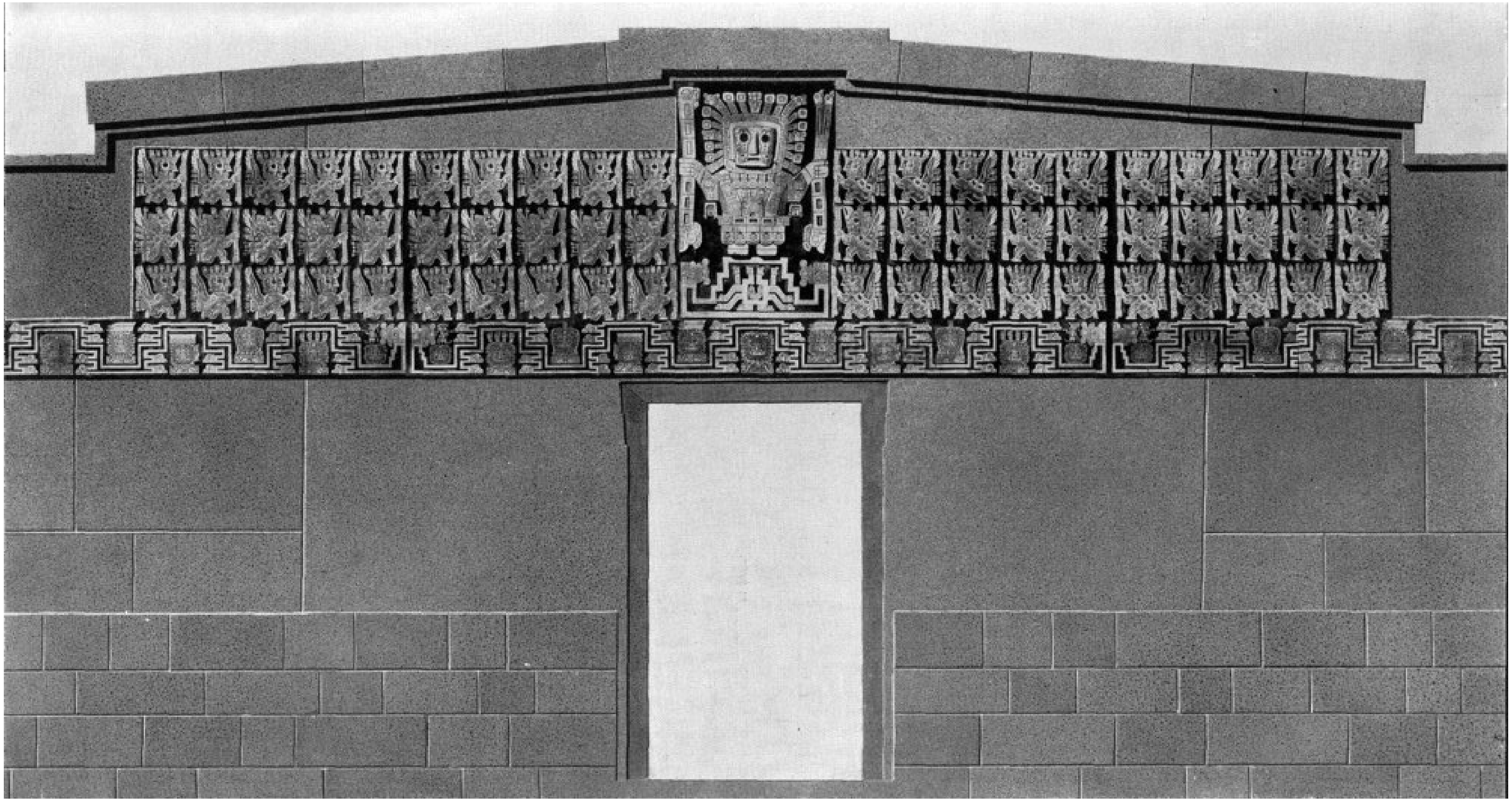

Fig. 78 Drawing of the Sun Gate of Tihuanaku with the famous calendar frieze. The caesuras, particularly clearly emphasised on the right and left of the central figure in the middle of the frieze, delimit the middle section of the calendar. against the later chiselled sequels.

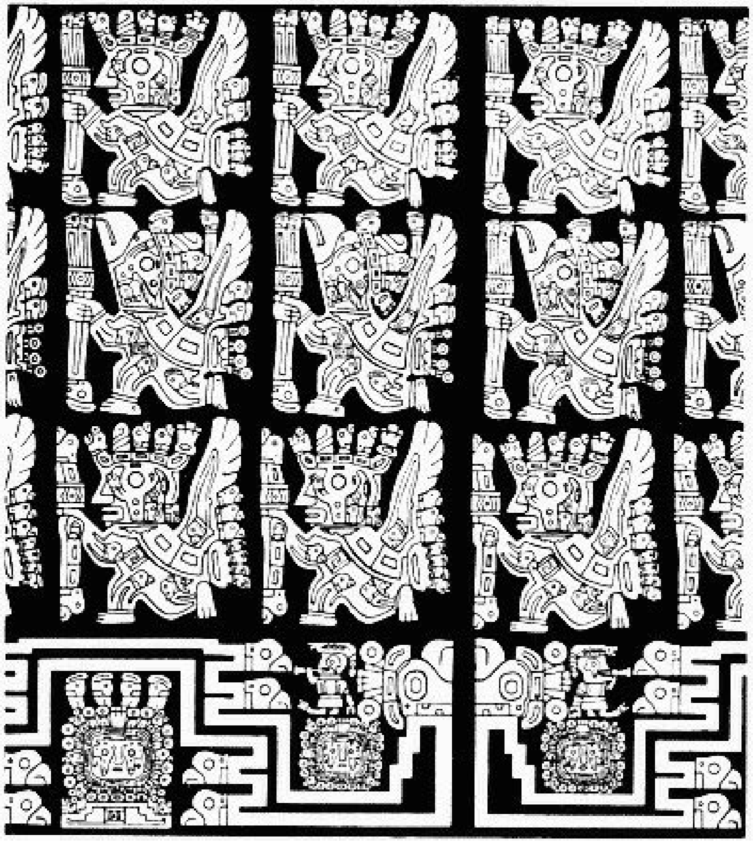

Fig. 79 Drawing of the right-hand frieze section of the Sun Gate Calendar with the caesura, which can be recognised by the tightly raised condor heads of the lowest frieze row.

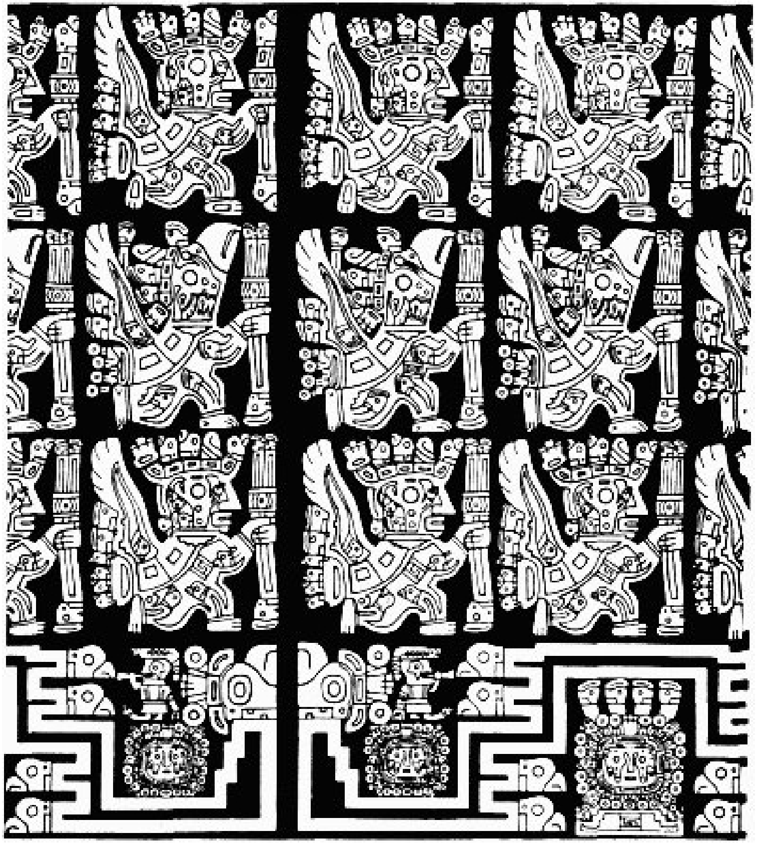

Fig. 80 Drawing of the left-hand frieze section of the Sun Gate Calendar with the caesura, which can be recognised by the tightly raised condor heads of the bottom row of friezes.

The description should be as brief as possible, and the accompanying illustrations should be helpful.

The so-called Sun Gate (figs. 30, 31, 32, 33 and 78) consists of a monolithic block of grey-green andesite lava weighing around 10 tonnes with a carved doorway the height of a man. Above the doorway is the frieze of figures, namely a meandering band immediately above the lintel, which encloses stylised human faces in a continuous sequence, whose eyes are "winged", thus giving the impression that the depictions could perhaps be symbols of a flying movement, i.e. perhaps of time. The meandering band (Figs. 81 and 82) has a clearly visible caesura on the right and left, which are very clearly drawn on the accompanying Figs. 78, 79 and 80 to draw attention to them. The photograph Fig. 32 does not show the caesura so clearly, but it is easy to find by comparing it with the drawings. The fact that these caesuras are intended to signify the end of a row is symbolised by a double-crowned condor with a steeply outward-pointing head, and this interruption by the vertically directed head signifies the end of the meander band on both sides. This is immediately followed on the right and left by a further vertically orientated cone head, which indicates the beginning of a new meander section. Our description is limited to the pictorial representations and signs within the centre field between the caesuras. The reasons for this follow below.

Within the meandering band between the caesuras, eleven human countenances with winged eyes lie looping equally through the meandering band. Each of these faces is surrounded by a number of radiating signs of various kinds. Almost each of these 11 heads also bears a kind of crest consisting of one to several similar or identical symbols, which can also be found in the groups of symbols arranged in a wreath around the faces, and form a kind of coat of arms above the ray faces. The middle ray face of the meander row does not bear a coat of arms, nor do the two outermost ones at the caesura with the steeply raised double-crowned condor heads, but these wing faces are replaced by a small human figure holding a trumpet to its mouth with one hand and carrying a human head in the other.

In the individual meander fields, two pairs of uncrowned condor heads always point to the face included in the meander section in question.

The meander frieze is not, as it initially appears, conceived and worked in a continuous manner, for the caesuras on each side described above ensure that this idea does not arise. These caesuras, which also fully encompass the groups of winged sceptre-bearers above them, thus represent a conceptual conclusion. It could hardly be expressed more clearly with the means of a pictorial script.

The gateway shown in the photograph (fig. 32) now clearly shows that the depictions following behind the left caesura on the left side of the sculpture panel are indistinct and difficult to recognise. A study of the original reveals that the figures to the left of the left caesura are only present in outline, that they are at least less carefully chiselled and that their carving has not been completed in part. This part of the frieze appears to have been chiselled at a later date, but at any rate by another hand showing less skill. This left-hand part of the frieze exactly mirrors the centre part between the two caesuras, but suddenly breaks off because the stone is finished. For this reason, further frieze sections were certainly present and intended to show the continuation.

The same indistinct sculpting can also be seen to the right of the right-hand caesura on the right-hand side of the door, although it is more difficult to recognise in the photograph (fig. 32) than on the left. However, examination of the original also clearly shows that the continuations on the right-hand side of the gate were made at a later date or by a different hand and are also unfinished, although not to the same extent as on the left. For this reason, the relief is only partially indicated by scratching, but not yet chiselled out. On the right-hand side, too, the figures suddenly break off at the end of the stone, indeed here too the joint runs right through the middle of the figures, so that it is clear that a continuation was present or intended on this side as well. Not only the sudden breaking off of the relief proves the former existence of the continuation, but also the discovery of another door made of andesite lava, which protrudes from the ground near Akapana Castle. This also bears the meander frieze with the ray heads above the lintel of the doorway, and also on

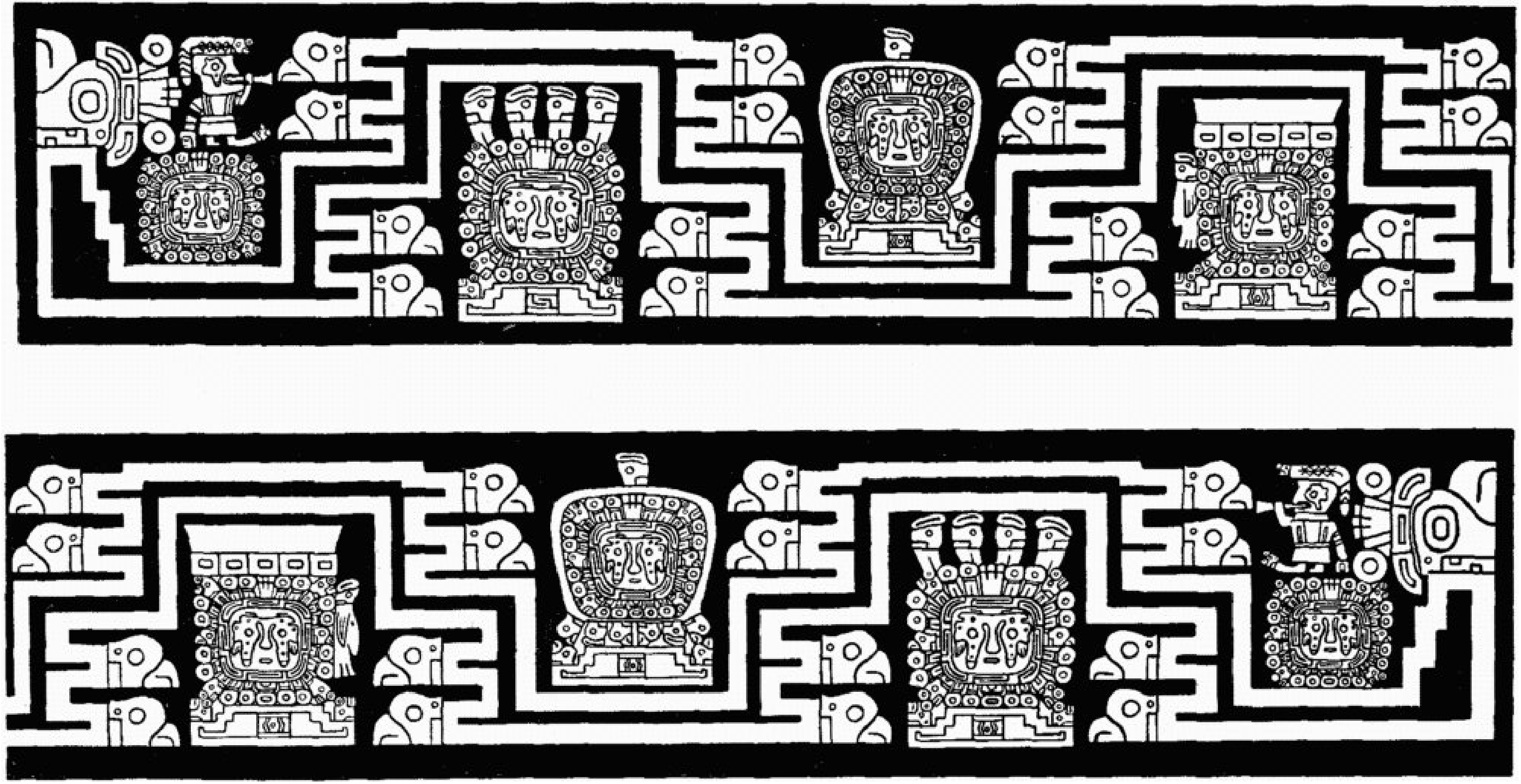

Fig. 81 Drawing of the meander frieze of the Sun Gate of Tihuanaku from caesura to caesura, composed in the manner shown in Fig. 82.

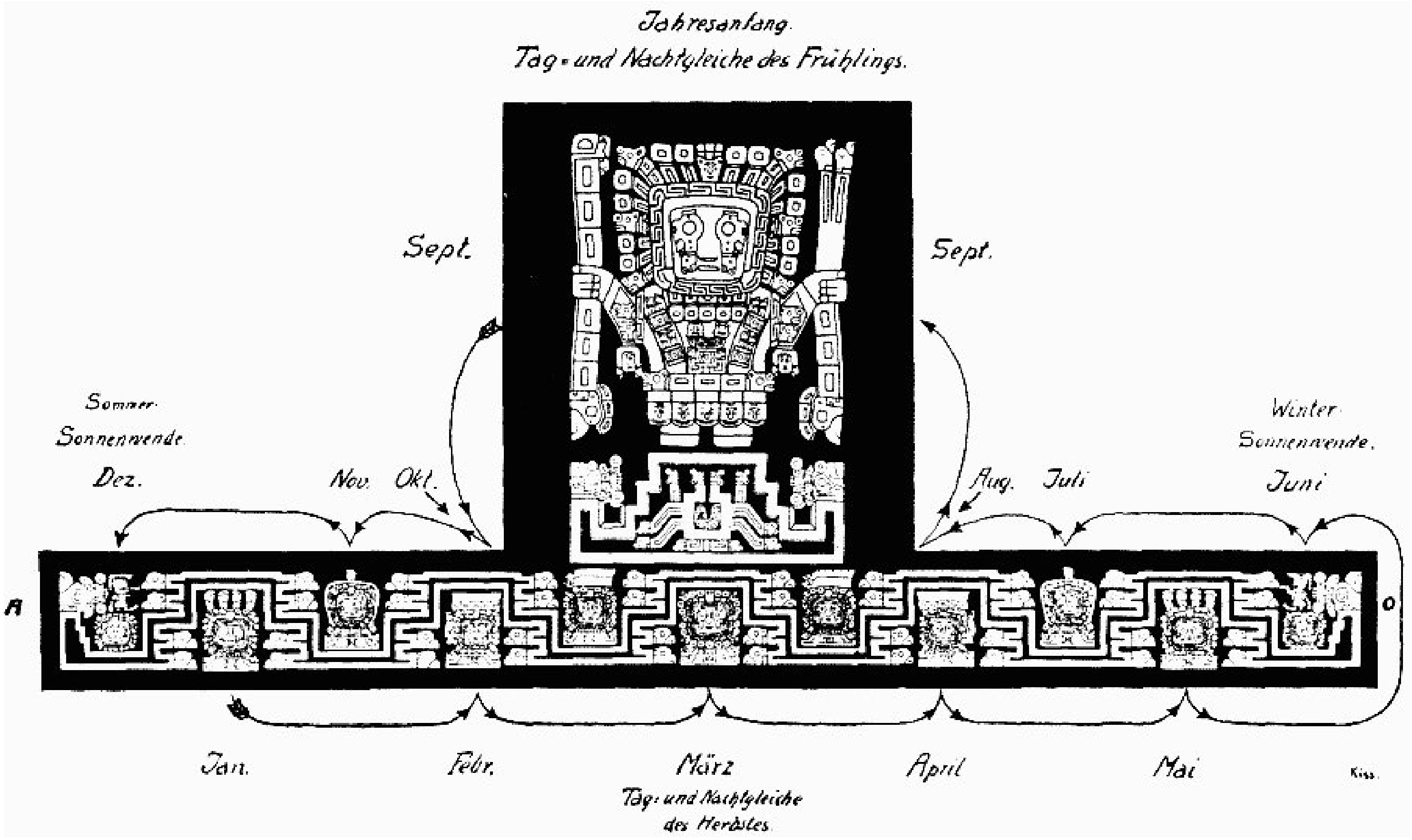
Jahresanfang.
Tag- und Nachtgleiche des Frühlings.
Sept.
Sept.
Sommer-
Sonnenwende.
Dez.
Nov.
Okt.
Aug.
Juli
Winter-
Sonnenwende.
Juni
A
O
Jan.
Febr.
März
Tag- und Nachtgleiche
des Herbstes.
April
Mai
Kiss.

Fig. 82.
The annual frieze of the Tihuanaku sun gate calendar. The twelfths of the year (months) are to be read according to the instructions labelled with arrows.

The sculpture on this portal was not created by the same hand that chiselled the frieze of the central section of the gate between the two caesura of the sun gate.

Since the difficult-to-recognise continuations to the right and left of the caesura on the Sun Gate itself prove either a different artist's hand, i.e. perhaps a student's work, or a later, unfinished addition, the following will only deal with the central part of the frieze as the probably original portal decoration, especially since the lateral continuations are only an exact repetition of the central part and therefore offer nothing new. Moreover, it will be recognised in the course of the discussion that the explanation of the central part is quite sufficient to understand the meaning of the hieroglyph.

A twelfth rayed antlion, this one without a "crest", as the composite symbols above the faces with the winged eyes should be called, is carved as the main figure with a greatly reduced human body and stands on a rich staircase-shaped pedestal exactly in the axis of the doorway (Fig. 82). Like the 11 other - disembodied - rays of light in the lower meander frieze, the head of this full-length figure also bears the same wreath-like formations around the face. The door probably owes its name "Sun Gate" to this radial arrangement of the numerous symbols because, in remembrance of the sun cult of the Incas and their predecessors, this door was readily associated with the rays of the sun and the individual faces were thought to be sun faces.

In addition to the central full-length figure, most of the 11 faces in the meandering frieze stand on stepped pedestals, which in turn bear several symbols, some of which recur in the halos of the winged faces.

To the right and left of the twelfth *full-length figure* described above, there are 15 figures on each side - counted up to the caesura - arranged in three rows one above the other, i.e. a total of 30 figures in rows of 10, if one counts beyond the main figure. They appear to be kneeling in front of the main figure (Posnansky's view) or walking (author's view). These are full-length figures of archaic artistic expression. The upper and lower rows of figures have human heads with winged eyes and bonnets made of individual symbols, some of which are familiar from the ray wreaths, while the figures in the middle row have condor heads.

heads with similar composite bonnets. All these figures carry sceptres in their hands, are depicted winged, and the eyes also have wings, so they are also provided with the "sign of movement", to use Professor Posnansky's expression.

Not only these thirty figures, but also some of the central main figure have a peculiarity. Without exception, they are depicted with four fingers on their hands instead of five, and the feet of the figures in the group of thirty winged sceptre-bearers only show three toes each.

The ideographic signs - individual and composite - such as the pedestals and the signs in them, the rays, figures, crests, etc. seem to be symbols taken from the circle of ideas of the common people, because they are essentially very simple signs.

Posnansky counts 34 simple and compound signs or symbols. Fig. 83 shows the most important of these, in particular those that cannot be assigned.

The author follows Posnansky's interpretations of the symbols. After the numbers of the individual signs in Fig. 83, the presumed symbolic meaning of the signs is added below, whereby the author follows Posnansky's interpretation of the symbols:

1, 2 and 3: single-crowned, double-crowned and uncrowned cone head. All three probably symbolise daylight and seem to mean the same thing as one sign each, namely "light".

4. Two condors lying apart, a double sign. They probably mean the same as 1-3, and perhaps also indicate that the mating season of the condors took place in the month to which they are attached as bonnets.
5. Double-crowned toxodon. It very probably means the sun, as according to Posnansky this extinct animal was considered a solar animal.
6. Condor sign in the wing. Movement sign of the light, the time, the hour, applied to the wing eye, the eyesight.
7. Condor(?) on six moon signs. Meaning unknown. The bal- ken above the moons is probably a condor, as in No. 4. Cf. the photograph Fig. 97. The sign is probably unfinished, but the visible and preserved side indicates the tip of the condor's tail.

8. Pedestal with condor sign and the so-called " male" symbol. Probably only has significance as a base for the month antlers.
9. Human head. Meaning presumably: "Overcome opponent".
10. Puma head (with wide mouth). According to Posnansky, animal sacred to the moon, principle of evil.
11. Winged fish. Meaning unknown, but an attempt at an interpretation will be made later in connection with the days of the month.
12. Fish head. A symbolisation of the people's main food from the lake, a symbol of the moon, rain and water.
13. The "female" sign. It is found in the same way as the "male" sign, z. e.g. on No. 8, usually on the plinths, but also on individual figures.
14. Uncrowned condor head. Meaning: Bringer of light.
15. Shell. A symbolisation of another of the people's foods from the lake.
16. Ornament for framing the month's anthem. Presumably without symbolic meaning.
17. Three slit. Meaning: Torxodon, symbol of sunlight. This only emerges from the central upper wreath sign of the main figure between the winged and running sceptre-bearers, which bears a face, that of a toxodon, under the three-split.
18. Toxodon head. Meaning: Sunlight.
19. Winged eye. Meaning: Movement of the gaze.
20. Most frequent and perhaps most important sign. Meaning according to Pos- nansky: Moon.

It can be seen from the list of a number of the "symbolic" signs that only a few and relatively simple symbols are involved, such as "sun", "light", "moon", "fish", "shell",
"head" etc. For the most part, the signs are repeated so often that they can only signify very simple concepts as symbols, even in compositions. The frequent repetition of the individual signs gives rise to the suspicion that they are not *mainly* symbols that have been repeated over and over again to the point of weariness, but perhaps "units", numbers that are lined up next to each other for counting, such as the child does, who could represent the number five, for example, by placing five lines next to each other and thus use a kind of picture writing for numbers.

If, for example, several different fruits are drawn on paper, the pure counting of the fruits results in the number 5, but the symbolic meaning is different, and the whole group of different fruits could also have the meaning of "still life". The symbols on the Sun Gate seem to have been applied in roughly the same way, so that the following interpretations of the frieze's ideographs could result.

1. Individual characters as pure numbers - character = 1 - regardless of their other symbolic meaning,
2. Individual characters as symbols,
3. Groups of individual characters as symbolic picture writing.

The following remarks will attempt to show whether these attempts at interpretation also apply to the Sun Frieze.

For the interpretation of the meander frieze and the symbols of the main figure, the symbols that directly surround the twelve faces, so that they look like shining suns, are particularly important. The coats of arms, bonnets and bases of the individual faces and figures are preferably composed of the individual symbols.

The back of the gate (figs. 30 and 33) has larger and smaller niches in two storeys one above the other next to the doorway on both sides, whereby the upper row of niches was intended to be continuous and probably continued over large stretches of the wall continuation. Proof of this is provided by a model from Andesitlava, which is located near the mausoleum of Puma Punku, and which clearly defines the niche façade. However, it is irrelevant for the interpretation of the ideographs.

Posnansky considers the frieze of the Sun Gate to be an annual calendar carved in stone. It should be noted immediately that this view can also be endorsed from the standpoint of world ice theory.

According to Posnansky's interpretation, there are 11 "real" months in the narrow meandering frieze directly above the doorway, terminated by the double-crowned condors of the above-mentioned two-sided caesura (Fig. 82). The twelfth main month, in contrast to the 11 others, is depicted in full figure, standing on a high, rich stepped plinth above it and in the axis of the doorway (Fig. 82). The interpretation that these are the twelve months of a solar year can remain unchallenged, as the door and the division into twelve by its faces in the frieze speak very clearly in favour of this. In the pictorial writing of the prehistoric image

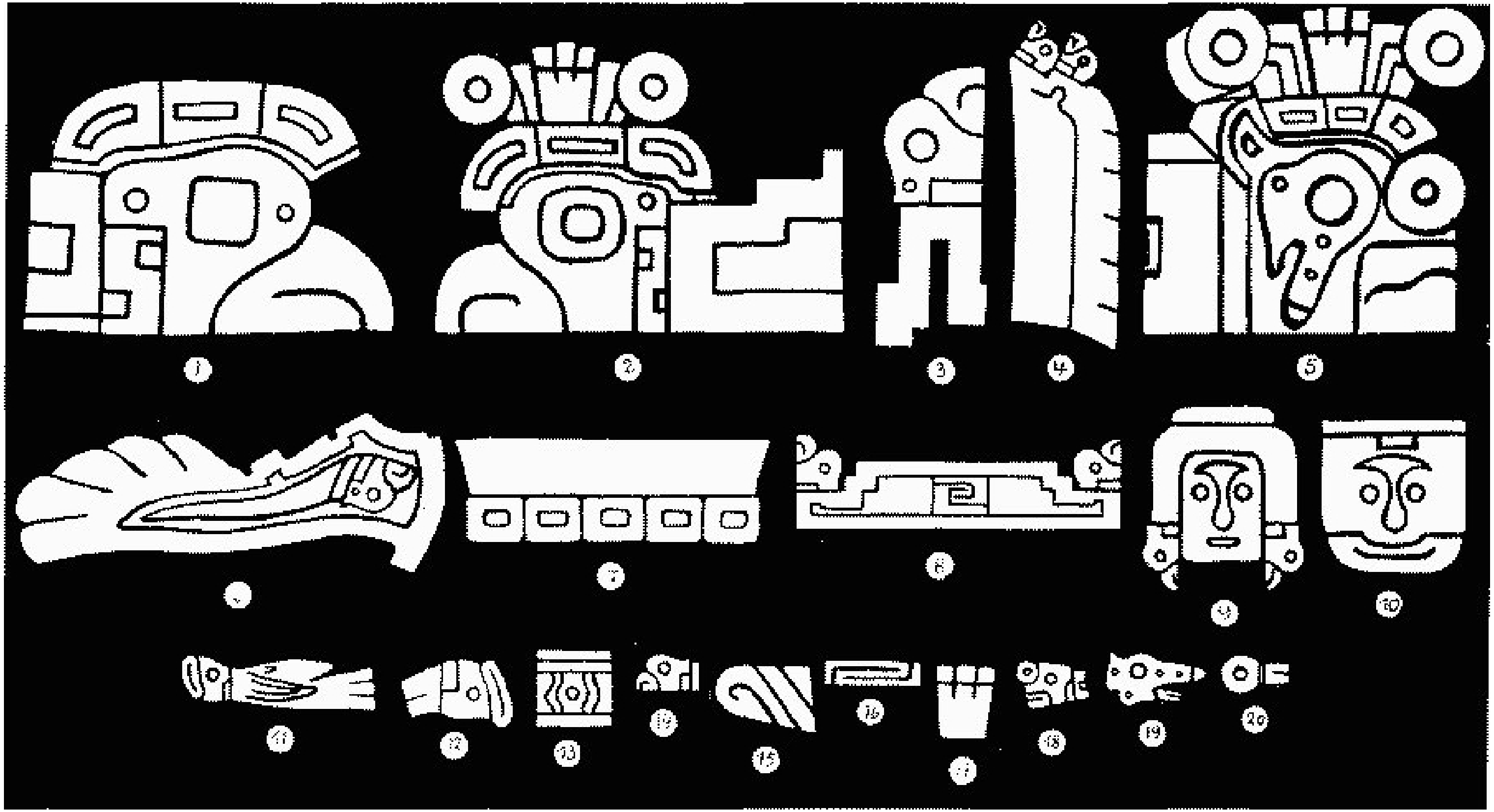
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Fig. 83: Panel with the most important individual characters that appear on the calendar frieze of the Tihuanaku Sun Gate.

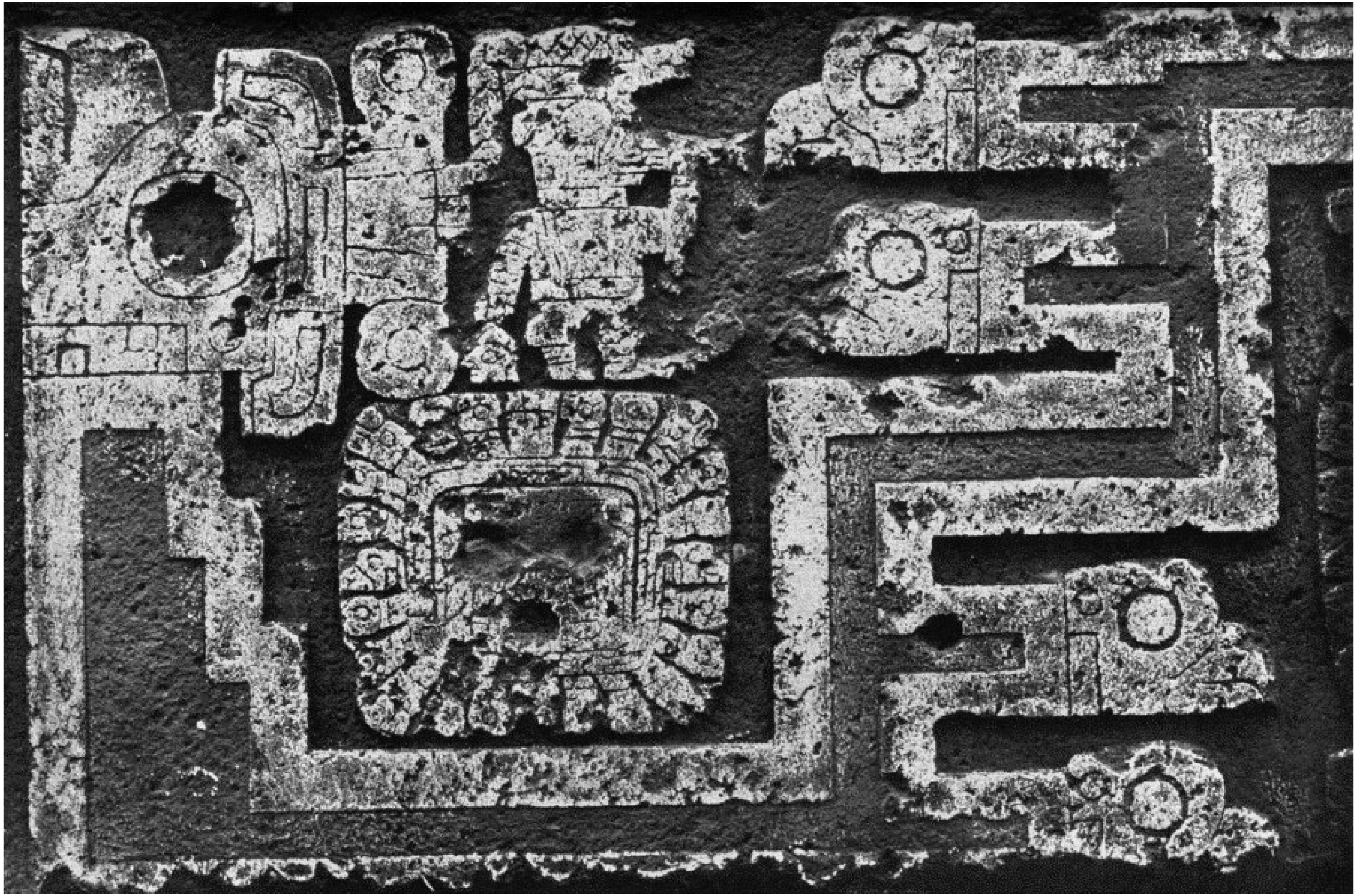


Fig. 84: The twelfth of December of the calendar frieze on the Tihuanaku Sun Gate with the solstice trumpeter as a crest. Phot. Professor Arthur Posnansky in La Paz.

The division of the year into twelve months could not be better and more clearly illustrated than it has been. It results from the simple counting of the twelve faces.

According to Posnansky, the central main figure is the month of September, the month of the vernal equinox in the southern hemisphere. The smaller head of the month lying vertically below it, also uncrowned like the main figure on a stepped base and inserted in the narrow meandering band, must therefore be March, the month in which the autumn equinox takes place in the southern hemisphere of our planet.

Accordingly, at both ends of the frieze - always counted only up to the double-crowned condor caesura - are the two solstice months, namely on the left side December with the summer solstice of the earthly southern hemisphere (on 22 to 23 December) and on the right side the winter solstice in the month of June (22 to 23 June). Both are particularly strikingly characterised by armoured and helmeted trumpeters blowing at the turning of the sun and carrying in their hands the head of the slain enemy, who probably wanted to abduct the sun but was prevented from doing so in time. The strongly elongated and childishly drawn left feet of the trumpeter figures clearly show that the sun is now marching backwards again. In addition, the tips of the outgoing feet each bear a head of the sacred sun animal Toxodon to leave no doubt that the sun is turning back, as the Toxodon head of the trumpeter's helmet also points vigorously towards the return (fig. 84).

We owe the conviction that the 12 faces with radially arranged signs represent the months of a year precisely to these solstice trumpeters, which leave hardly any doubt about the character of the meander frieze and the main figure. If the trumpeters were missing, many objections could be raised against this interpretation, but the two small trumpet-blowing figures give us the right to search for the completion of the stone calendar from the other remaining signs.

For Posnansky, the correct naming of the months results from the arrangement of the equinoxes and solstices. The counting of the months between the openings of the meander band is presented in a very meaningful and surprisingly clever way, as it is not at all a

It was easy to chisel a calendar that showed *both* solstices and *both* equinoxes and still put the other months legibly in between.

It was no longer possible to line up the months one after the other, because then the solstices and the equinoxes would no longer lie correctly in the course of the year, but a different but equally clear way had to be found to make the months legible. The ancient sculptor achieved this by using the meander band, which has the great advantage for his purposes of opening upwards and downwards, so that a meander section can always be skipped when counting the months (Fig. 78 and 82). Beginning with January, Posnansky continues counting the heads of the months in the meander fields that open downwards, from left to right: January, February, March (equinox of the southern autumn), April, May, then moving upwards around the double-crowned caesura condor head, June (winter solstice of the southern hemisphere), July, August, now reaching out to the main month September (vernal equinox of the southern hemisphere, at the same time the beginning of spring and the beginning of the year), October, November and finally December (solstice of the southern summer). To check this count, we recommend using Fig. 82.

According to this method, therefore, the counting of the months presents no difficulties, and the method of depiction is so clear and convincing that it is difficult to find a better way of expression in artistic form, which would not only clearly and unambiguously count the individual months, but also clearly and unambiguously place the solstices and the equinoxes on the frieze. With his pictorial script, the stonemason had no other way of putting his thoughts onto a table than this. And it is probable that no other form of representation in pictorial script could be invented that would record the months even more clearly without the meander band.

However, this also invalidates the common assumption that it could be a "sun gate" if one approaches the interpretation under the calendar assumptions of the present time. In the main, it is a solar year with its "months", and the months bear the coronae. It would therefore be a "moon" or a "month" gate, a solar year or calendar gate, and if the term "sun gate" continues to be used in the following, this is done

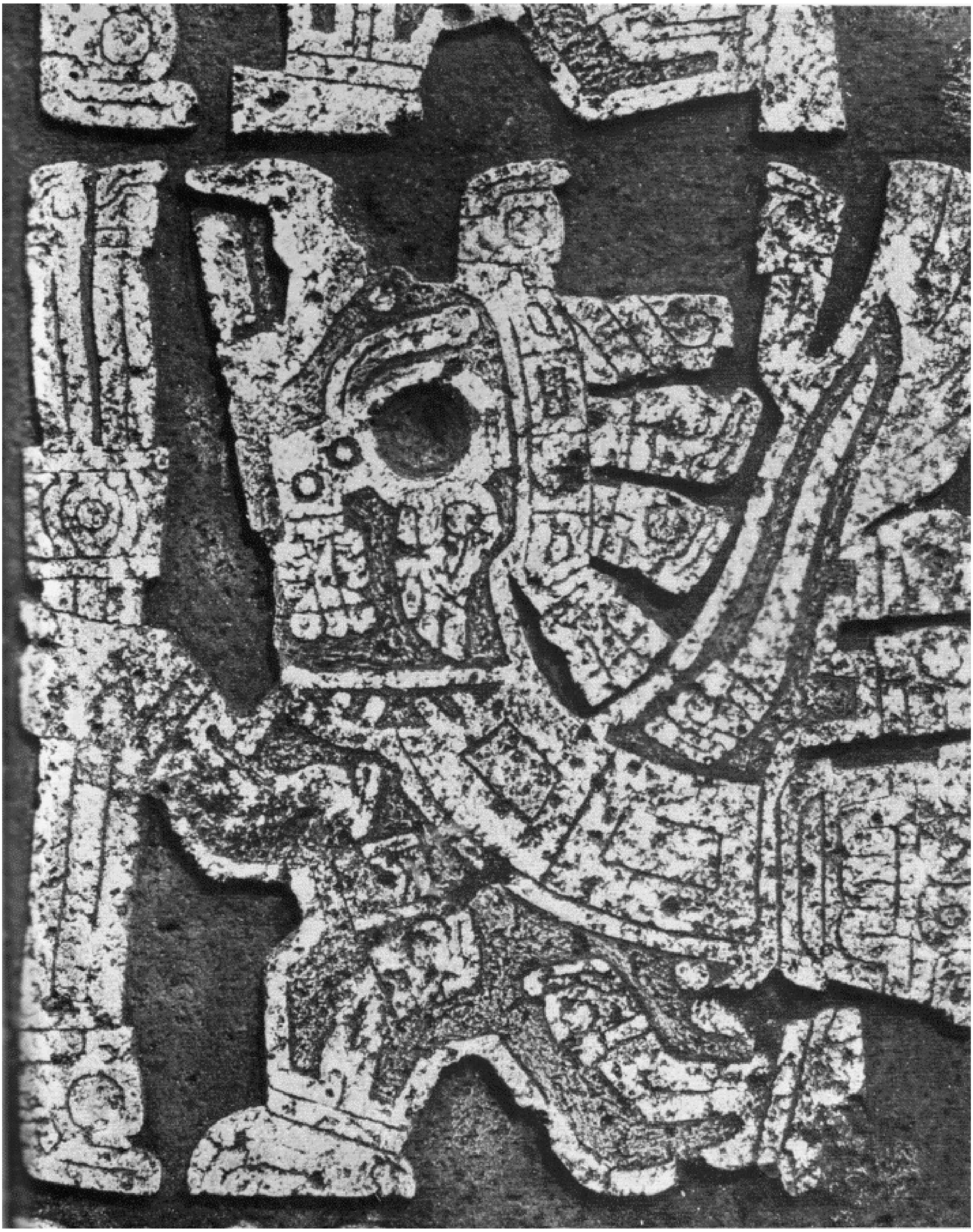


Fig. 85 Photograph of a sceptre bearer from the second series of hour tables from above on the sun gate of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

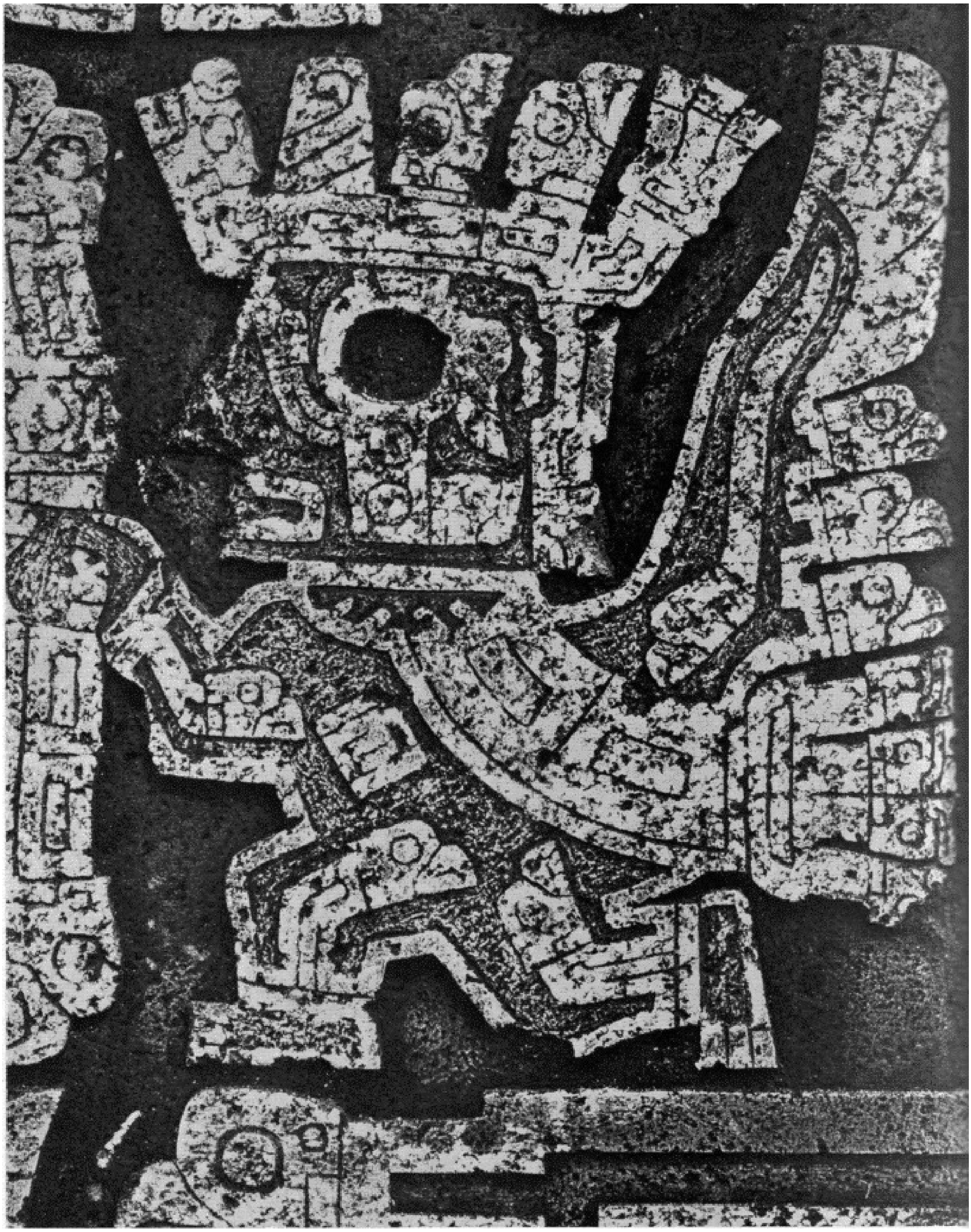


Fig. 86 Photograph of a sceptre bearer on the top row of hour tables on the sun gate of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

because the gate is famous and known by this name in literature and in the vernacular.

Since the interpretation of the months was so surprisingly simple and thus the division of the year was done in a completely logical way, that with some practice the counting of the individual months, starting from the bottom left, through the meander fields opened downwards over the meander openings pointing upwards to the top left, offers no difficulties, one can cherish the hope that the calendar will continue to prove logical and can be unravelled in the same simple and obvious way, provided that it should contain further information, such as the days, hours and minutes. After all, the reading of the monthly calendar was particularly simple and clear for the simple man from the people of that remote time in its pictorial writing in that, for example, at the time of the summer solstice the sun went out over the southern corner of the eastern wall of the Kalasasaya solar observatory if one observed from the centre of the gate of the sun gate (Fig. 24). As the gate was set up above observation point A in Fig. 22 inside the solar observatory and was probably firmly attached to the still existing foundation for a long time, the position of the sun on the morning of 23 December corresponded to the position of the trumpeter on the frieze blowing at the solstice, namely the December trumpeter of the summer solstice in the southern hemisphere. At the two equinoxes, the sun actually rose above the centre of the Kalasasaya and above the centre of the East Gate and thus also the Sun Gate, thus taking into account the representation of the two equinox months of the frieze, which lie exactly above the centre of the doorway of the Sun Gate. The same took place at the winter solstice, when the sun rose over the north pillar of the east wall of the keep. This time the June trumpet corresponded to the turning winter sun.

Reality and depictions on the calendar frieze corresponded in this way, at least in the most remarkable months. At the time when the meaning of the old turf frieze was still known and the continuations behind the condor caesuras did not yet exist, the observer recognised that the migration of the sun was over with the turning point, because behind the caesuras the frieze ended on both sides.

In order to find a further interpretation of the calendar, Posnansky now also began to search for the number of days in the year, as anyone who has found the months would do. In doing so, he had to look for a number 365

The first step was to look for the number of days in our solar year and try to determine whether these 365 days were perhaps recorded somewhere in groups of 30 or 31 days or even 28 or 29 days in one of the months. The determination of days for leap years was perhaps not even necessary with such a childish calendar, and it would have been enough and would have been a great deal for the calendar knowledge of those prehistoric times if the normal correct number of days in the year had been available on the stone table.

Posnansky, of course, immediately looked for the days *where they logically belonged* and where there was enough space for the sculptor to place the correct number of days, even with small deviations, such as 30 days one time and 31 days the other, etc., *namely on the month strands*.

Here, however, quite unexpected difficulties set in, inconsistencies of a very special kind, indeed, there are details from the calendar that are simply wrong under today's conditions. These difficulties could not be overcome by Posnansky and will never be overcome by anyone who bases the solar year on today's 365 days with their 8760 hours, days and hours that the year, calculated in the round, has and has had since time immemorial.

The reader is asked to start by following the same path as the author, which is logical for counting the days of the year.

This way leads over the months, on which the days per month must sit, in order to give together, multiplied by 12, the total number of days in the year.

So let's start counting, as we are used to and know from our paper calendars, with January. On the stone calendar of Tihuanaku, this January, the second head of the month from the left caesura onwards (figs. 89, 96, 81 and 82), bears 24 signs around its stylised face, and full of the joy of discovery we add the four fish heads of the bonnet, as we are biased in our search for the number 30 or 31 for the number of days in a month. We also add the two condor heads on the base of the January figure, as counting them gives us the number we are looking for, 30. Nevertheless, it will perhaps become clear to us that it is rather awkward to place the four fish symbols above the month's face and the two condor symbols below it on the pedestal, where the number of days of the month is to be found.

around the head of the month, all thirty could easily have been accommodated by moving the twenty-four signs together. Even if the symbols should be irrelevant for the time being, it is noticeable that the twenty-four ray signs immediately around the face of the month of January bear only Moon and Sun signs and that now four Pisces and another two Sun or light signs are added.

Counting February, all the signs, as has always been the case with this calendar, are simply counted as numerical signs, so that the number of days in this month of February, 33, no longer seems to be correct. For March, however, the month of autumn, which has no crested equinox, there are only 26 signs at all, and people were afraid to add the two Toxodon signs of the base in order to arrive at the number 26, which is also insufficient. The doubts are even worse for the month of June at the right caesura and even worse for the main month of September, where it is impossible to know how many signs to add to the 24 of the aureole of this main figure.

The reader will start counting again, adding this and omitting that, but will always be astonished at the 24 stubborn signs that are placed in a fixed position around the head of the month, with the exception of the two months of February and April, where a winged fish is attached directly to each of the 24 ray signs, which could therefore perhaps be regarded as an additional day. And finally, the reader will be of the opinion that only the twenty-four signs around the beginning of the month could and should signify the days if the calendar is to have any claim to clarity, while the other signs signify something else. But adding up the 24 days in each month will then give the number 288, and if you want to count the two "added" fish, 290. Neither of these two numbers is correct. They do not add up in the year. So either the calendar is wrong or the ray signs around the beginning of the month mean something completely different, such as something symbolic, which is difficult or impossible to decipher. After all, we would have liked it if the days could be counted in the same logical way as the months, because the symbols used are too simple for anything special to be read out of them - even in their compositions. They are almost exclusively representations of the sun, light, the moon, some animals in the air and the sea.

Since all months, with the exception of the solstice months and the months of day and night, are capped, it is possible that these simple signs signify months, such as "January", "February" and so on. This possibility is also admitted. For example, the four fish above the month of January could mean the "fish month", i.e. the month that was particularly favourable for fishing in Lake Tihuanaku. It must be admitted, however, that the symbolic meaning of the individual month caps in their various compositions is unknown. However, it will be explained later that these signs can have great significance as pure numerical values.

The final result of our count is therefore that we found 24 ray signs around the heads of the months twelve times and one in each of two months.

"added" fish, which increases the number of credibly and logically presented days to 290. Since it is very obvious to anyone who has travelled across tropical seas when such a flying fish suddenly slaps against the deck and is simply there, i.e. has been added, the assumption that these two fish were actually created by the sculptor as

have been thought of as "additions". However, the result is no more encouraging than without them, because whether we count 288 or 290 days from the annual calendar, this will not be correct, as the year has 365 days.

With these trains of thought, which the reader has thought along at the author's request, probably everyone who has ever dealt with the Sonnentor hieroglyphic will or has gone about unravelling it, and the author has also struggled with the 288 and 290 characters, and he knows that Professor Posnansky has also done so. Everyone who has tried to make friends with him has failed at the problem of unravelling the day, and Posnansky was also hopelessly stuck.

In a publication by the scholar on 30 March 1930 in the newspaper "Diario" in La Paz in Bolivia, Posnansky therefore dispenses with the explanation of these 12 X 24 = 288 day signs, which, according to a more recent view, are obviously not day signs. He drops them all and interprets them as astronomical groups of signs. Since Posnansky attempts an interpretation on a different basis in the aforementioned publication, this new calendar interpretation must be discussed below.

Posnansky has attempted to combine the three rows of figures (Fig. 78 above, right and left of the main figure) together thirty human and half-human figures with wings to count as days, but here too the number of days, namely 30 x 12 = 360 days, corresponds significantly better, but still inaccurately, with the actual 365 days of the year. It is clear that the sculptor would have done better and would have been clearer to the people if he had *placed* the *days next to the months*, where they belong, and only then drawn the hours above the meander frieze to the right and left of the main figure, Septem ber, for lack of space. For he would then no longer have been able to hang the hours on the day signs of the month's anthems because the scale was too small. The artist must have known, as we do today, that the *days* belong *to the months* and not the *hours to the months.* So why didn't he hang the days on the months, where it was only necessary to put 30 or 31 instead of the 24 or 25 figures in the halos, depending on the number of days in the individual months? This was easy to depict artistically. For the months with 31 days as well as for the month with 28 days. It was possible without further difficulty to arrange 30, 31 or 28 day lines in the wreath instead of 24.

No matter how you count and interpret the calendar. Only the representations of the twelve months of the year with their equinoxes and solstices remain clear and logical. Everything else is and remains dark and will remain dark under the circumstances in which we are used to thinking today and believe we have to think. For it is always difficult to believe that an artist who so brilliantly and unambiguously solved the depiction of the months should not have been able to add the days to the months correctly, especially as this is much easier than the depiction of the months with the solstices and equinoxes.

It seems as if he didn't know how to do it.

If Professor Posnansky nevertheless publishes the briefly described attempt at an interpretation in the "Diario" of 30 March 1930, then in my opinion he has not succeeded in unravelling important parts of the calendar frieze, with the exception of the interpretation of the month, of course, which may well claim to be correct and whose unravelling is Posnansky's undoubted merit. Nevertheless, more than a remnant remains. The neglected 288 or 290 wreath signs around the twelve month's anthems, and further neglected 157 signs in the month's frieze and then a further 660 neglected individual signs in the decade-week frieze. There are several great unknowns here and they will remain there, because an interpretation cannot be found with the conventional means of today's calendar science.

On the other hand, a different theory will now be presented, which will at first seem very strange, even disconcerting, and I would ask you not to put the book down immediately. Rather, it should be at least entertaining to follow the following train of thought, if, after reading it, the suspicion that it might be a truth, even if somewhat unsuspected, should not be forced out.

The author puts forward the following theory.

1. The sun frieze of Tihuanaku is a calendar with 12 sections of the year. Solstices and day and night glides are depicted on the calendar.
2. Each of these 12 annual periods has 24 days, only the annual periods of February and April have 25.
3. Each of these days has thirty hours.
4. Each of these hours has 22 minutes.

Once again, the reader's patience is requested. The author would also like to ask you not to telephone the doctor immediately after reading the four points of the theory mentioned above to have the poor author picked up for cold water treatment. He assures me that he is healthy and that it is not easy for him to hold up his broad back to any deadly laughter that might break out.

The glacial cosmogonical explanations that follow have not been freely invented or forcibly and mysteriously calculated out of exuberant enthusiasm for the creator of the world ice theory, but follow inevitably from the results of the second section of this book.

The author - not unlike Professor Posnansky - was also powerless before the riddle of the sun frieze and did not even intend to concern himself with deciphering its signs. Rather, he only studied Posnansky's results, insofar as they were available, and learnt in frequent oral discussions on the spot part of what Posnansky had compiled in the course of his life on the question of the Sun Gate decipherment. After a lengthy immersion in the material, so-

In South America as well as at home, the sun frieze was set aside until the treatment of a seemingly completely foreign area, namely that of the nature of the ancient beach lines on the highlands of Bo- livia and Peru, brought about a very surprising change.

It is known from the previous section of this book that the city of Tihuanaku was located on the larger Lake Titicaca during one of its main construction periods and that the harbours of this city, which still exist today, indicate that there was a lot of shipping on the lake. It should also be remembered that this lake was "crooked", namely that it lay within the boundaries of the beach line that we see today sloping down from north to south in the shore mountains near Puno on Lake Titicaca and disappearing south of Oruro in the saltpetre deserts of Chile. The fact that the lake was not in reality inclined at that time, as the shorelines are today, probably does not need to be emphasised again, because the normals to the radii of our earth were shifted at that time due to the presence of the post-stationary near-earth cenomoon.

If our Luna could be brought to the earth's surface today at a distance of about 6 earth radii, it would be possible to fill the lake basin, which is bounded by the inclined beach line, again without the water flowing off to the south. The lake would therefore no longer be
"crooked", but it would be completely "straight".

This remark is only intended to take away the mystery that some readers might still attach to the shoreline of the former Tihuanaku Sea, which today slopes from north to south. Although the shoreline has not changed its position, direction and extent, the equilibrium conditions under the influence of the near-Earth tertiary satellite were different than today, so that at the post-stationary time of the beginning confluence of the advancing tidal mountains with the advancing narrower belt high tide, the water level was just as fair for the sense of equilibrium of mankind living at that time, as the level of Lake Titicaca is just as fair for us humans today, because we are under the gravitational influence of another satellite that is still very far away from the Earth. The "sloping" shoreline today reveals the shoreline boundaries of the ocean, which once rose towards the equator, sucked in by the prelunar satellite, and that is why the shorelines still rise from south to north today. From this point of view it is clear that the world ice theory can do without a tilting, rising or sinking of the continent of South America.

The city of Tihuanaku with its harbours is located on beach line Y (Figs. 8, 11 and 12), that of the post-stationary equilibrium between the advancing higher tide mountains and the advancing belt high tide. The author knows that it is difficult to admit the existence of the oldest part of a city complex that was built in the post-stationary time of the lunar predecessor, because according to this assumption such a city would have to have an age of unknown millions of years! Under these circumstances, even supporters of the world ice theory should be happy to familiarise themselves with the idea that in this case it is correct what the prevailing school of science that sets the tone in public today claims, namely that the continent of South America tilted southwards not so long ago, or that it sank in the south and rose in the north. The existence of the harbours that lie on this sloping lake, or rather on this sloping bay with a narrow river-like entrance, would perhaps be better explained, albeit somewhat forcibly, by the assumption of uplift and subsidence.

The author was no different. The uncompromising implementation

Although the examination of the idea of the formation of shorelines on the basis of the findings of the world ice theory clearly led to the conclusion that the oldest structures of the city of Tihuanaku, and in particular its harbour buildings, must necessarily date from the post-stationary epoch of the above-mentioned Flood Equalisation, the enormous number of years that emerged for their age, even with a superficial estimate, put pressure on the mind, as it were, and prompted the author to constantly re-examine his train of thought. However, there was no public attack on this publication in issue 9 of the "Schlüssel zum Weltgeschehen". The geological attempt at proof in the second section of this book and in the aforementioned publication in the "Schlüssel" corresponds with Hanns Hörbiger's express agreement to the premises of the doctrine of world ice, but perhaps concerns of a different kind, especially those due to the almost unimaginably old age of the city of Tihuanaku, are so serious that it is worthwhile to approach the matter from a different angle.

Do we perhaps have another proof of the great age of the city of Tihuanaku, a proof that may have nothing to do with the world ice theory?

has to do with it? Have perhaps the inhabitants of the ancient metropolis themselves left behind clear evidence, so that we can say that we were not mistaken after all in the WEL geological determination of an age of many millions of years for the city of Tihuanaku?

The inhabitants of Tihuanaku do indeed seem to have left such evidence behind in the centre of the old solar observatory Kalasasaya, and these prehistoric people were certainly not followers of Hanns Hörbiger's world ice theory! The documentary evidence is the same one that we tried to unravel on an actualistic basis together with Arthur Posnansky, albeit with very little success. The documentary evidence that we now want to read on a different basis is made of glass-hard andesite and is now called *The Sun Gate of Tihuanaku*. We already know that it bears a calendar, even if some of its details, indeed most of them, seem nonsensical and illogical. We have seen that Professor Posnansky succeeded to a small extent in reading the ideographs of the Sun Gate. Although he was able to recognise very clearly the twelve sections of the year - he called them months - from the twelve ray heads of the calendar frieze, he also found the names for the two solstices in winter and summer and also the equinoxes and the beginning of the year, all related to the conditions of the earthly southern hemisphere, but the attempt of the researcher in La Paz also failed to determine the numbers of days in the year and the twelfth of the year. There were such inconsistencies in the calendar that sometimes doubts arose as to whether it was a calendar at all.

Therefore, the author now has the right to offer his own interpretation, even if it is only one of many. Since this interpretation was the result of many years of joint work with Hanns Hörbiger and finally received the approval of the creator of the World Ice Theory in Mauer, it should at least attract attention in WEL. circles.

So if the figures and signs of the Sun Gate really are a calendar made of stone, then one must demand that the calendar is absolutely correct and easy to read, because otherwise it would have no purpose. And so it follows from the foregoing that the stone calendar, as we believe we have to read it today, contains all kinds of nonsense, indeed is essentially downright wrong. The stone calendar of Tihuanaku has been completely forgotten by us humans of the Luna period.

to read completely, as long as we assume lunar states. It is pointless to dwell on this. The author has had his experiences in this respect and has wasted a lot of valuable time trying to unravel the mystery of the calendar from his lunar point of view.

We therefore want to try a different approach.

What and whose time must a calendar found in an ancient city indicate?

Everyone will probably answer: Presumably, this found calendar must indicate the time that was valid when the ancient city in question was built or existed and was inhabited. We will therefore be able to deduce the Julian calendar from any calendar found in an Italian city from around the third century AD and will probably be right. We will be able to deduce the Gregorian calendar from a calendar printed at the time of Frederick the Great and found in any archive of any Prussian city.

The author claims the same right:

When a stone calendar is found in the city of Tihuanaku in the highlands of Bolivia, it is a Tihuanakian calendar and not a Julian or Gregorian calendar. The Tihuanakian calendar reflects the time relations and the division of time that was customary at the time of the construction or the heyday of the ancient city of Tihuanaku and precisely reflects the division of the year, the number of days in the year, possibly even the months, namely the real months that correspond to the actual orbits of the moon at that time.

Despite its high degree of accuracy, our modern calendar is somewhat unreliable in this respect. It recognises twelve months in a year, but every schoolchild knows that we have thirteen months in a year rather than twelve! Our modern calendar does not even clearly indicate the number of real months, namely the actual orbits of Luna in the year, because it only prints small monuments on the days it enters or leaves them out completely. Our calendar is limited to the indication of the twelve annual periods, erroneously or at least inaccurately called "months", and to the indication of the days, of which we are known to have 365 per year.

Using the theory of the WEL, it is now necessary to determine how the calendar conditions at the time of the post-stationary

The question would have to be answered as to how the equilibrium state between the advancing flood crests and the advancing belt flood was achieved. The following questions need to be asked and answered:

1. Was the solar year as long in the Tihuanaku period as it is today?
2. Did the solar year of Tihuanaku have 365 days a year or did it have more or fewer days?
3. Was the length of the day then the same as today, or is it possible that the days were shorter or even longer than today?
4. Did they divide the solar year into real months according to the actual orbits of the moon, or did they do what we do today, divide the solar year into a number of sections? In twelve, as we do, or in more or less?
5. Did the calendar of that time indicate the actual number of lunar orbits, i.e. the real months of the year, or was it omitted in the same way as it is sometimes done today? Did they perhaps only place small lunar signs on certain days, as we often find in our modern calendars?

These five questions sound very strange. After all, since time immemorial we have only known our calendar with the solar year of 365 days of 8760 hours and the division of the solar year into twelve sections, which we inaccurately call months without them actually being months! Nevertheless, the five questions must be asked in order to do justice to the stone calendar of Tihuanaku. He has the unconditional right to this question. It stood and still stands in the centre of the old metropolis on the sloping lake and must therefore be treated from this position and from this origin. It has the right to relate the sloping shoreline and the time of its creation to the stone calendar, because the Sun Gate stands only a few hundred metres away from the old sloping shoreline and is therefore entitled to a close relationship with it. In Germany, we do not expect the Julian calendar to coincide with our usual division of time.

What is right for us must be right for the inhabitants of the ancient city of Tihuanaku.

Before answering the five questions mentioned above, let us realise what kind of calendar the post-stationary period must have had if we take the WEL. as a basis.

We will use the two drawings of the WEL. office in Mauer near Vienna, which we already learnt about in the second section of this book, with the legends and calculations on them, namely drawings no. 531 and 533, which are reproduced in Figs. 87 and 88. Hanns Hörbiger created these drawings in August 1927. Sheet 531 (Fig. 87) shows the pre-stationary to stationary stages in the tertiary cataclysm, which I ask you to study in connection with drawing no. 152 in Hörbiger-Fauth's main work on page 367 of this work.

Sheet 533 (Fig. 88) shows the post-stationary stages, insofar as they seemed particularly characteristic to Hanns Hörbiger at the time, and also deals with the tertiary cataclysm, i.e. that of the lunar precursor. It should be emphasised once again that both drawings were made in 1927 and were made known to Mr Fauth and Dr Voigt. However, the author's research trip to Tihuanaku did not take place until 1928 to 1929, so Hanns Hörbiger's calculations of the stages of the tertiary cataclysm were made independently of this trip and, above all, beforehand.

In these drawings Hanns Hörbiger gives some information for each stage of the Tertiary Cataclysm in the legends on the left margin of each stage, among which, in connection with the solar gate calendar of Tihuanaku, we are particularly interested in the information on the day lengths (T = day length in *today's* hours), on the month lengths (Mt. - month length in *today's* hours) and finally on the cenomoon distance R, measured in earth radii r (R = ar). And since we have come to the conclusion from WEL. geological considerations we had come to the conclusion that the formation of the Y-strandline (Fig. 8), on which the city of Tihuanaku with its harbours and its sun gate is still located today, was formed during the post-stationary equilibrium epoch of the caenomoon period, we are therefore particularly interested in stage 24 from Hanns Hörbiger's calculations and drawings from 1927 from sheet 553 (Fig. 88), we are particularly interested in stage 24, perhaps also the two neighbouring stages 23 and 25, because around this time, when the advancing flood crests merged to form the leading belt high current, only the Y-strand line can have been formed. And such a confluence must indeed have taken place around stage 24 of drawing 533 (fig. 88). The orbiting cenomoon was only 5.9 earth radii away (R = 5.9 r of the legend on the left at the edge of stage 24)

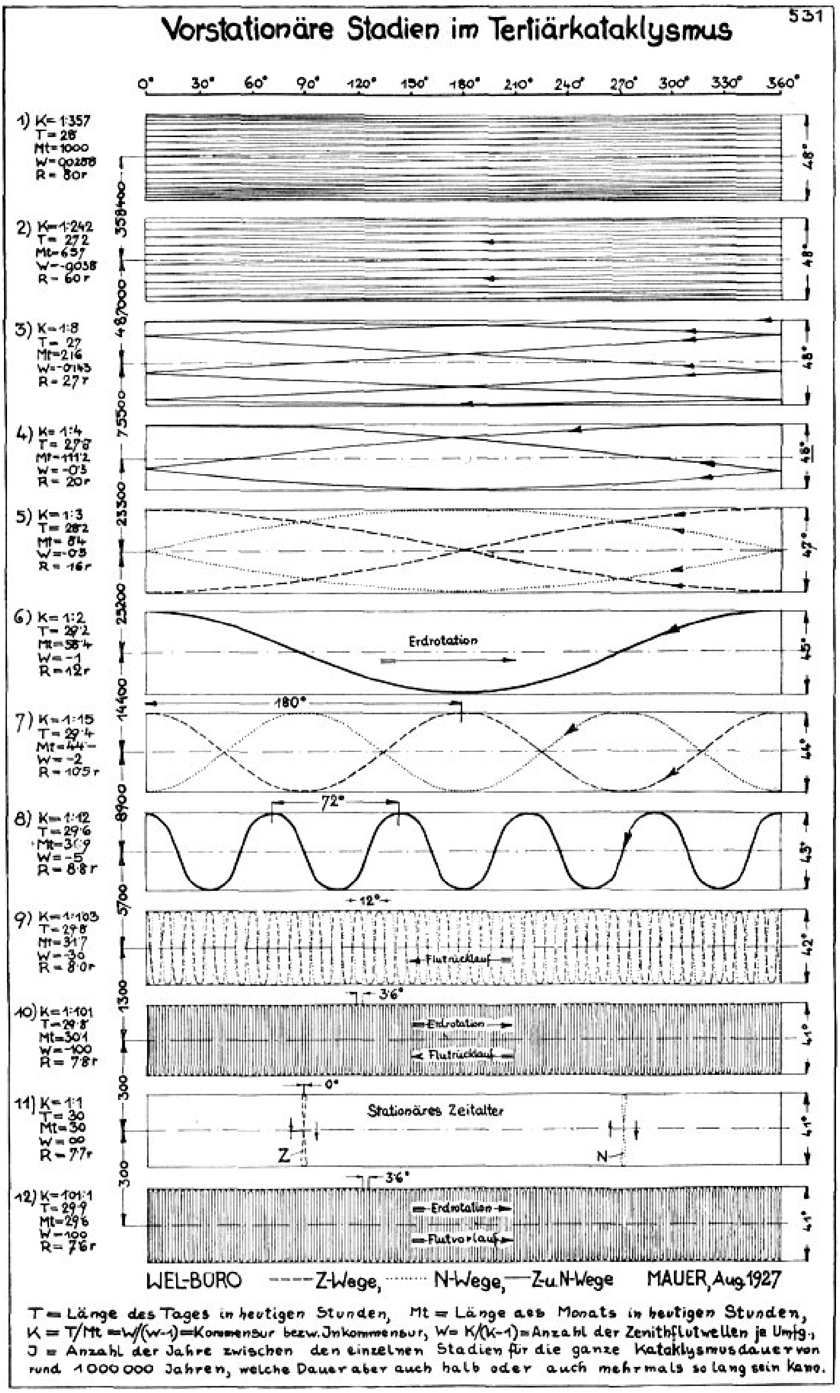
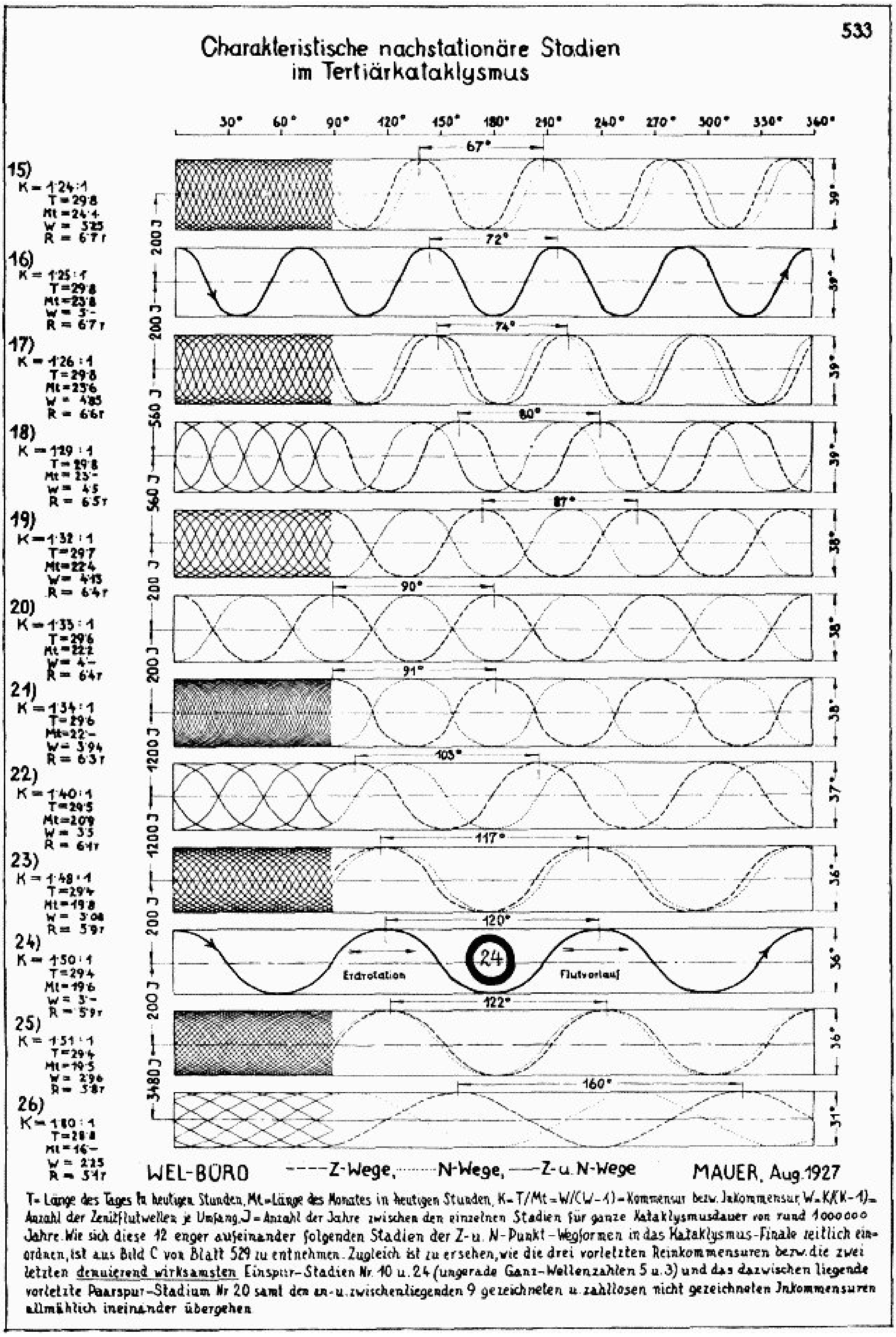

531
Vorstationäre Stadien im Tertiärkataklysmus
0° 30° 60° 90° 120° 150° 180° 210° 240° 270° 300° 330° 360°
1) K= 1:357 T= 28 Mt=1000 W=0·0288 R= 80r
2) K=1:242 T= 27·2 Mt=65·7 W=-0·038 R= 60r
3) K=1:8 T= 27 Mt=216 W=-0·143 R= 27r
4) K= 1:4 T= 27·8 Mt=111·2 W= -0·3 R= 20r
5) K= 1:3 T= 28·2 Mt= 84 W=-0·5 R= 16r
6) K= 1:2 T= 29·2 Mt=58·4 W= -1 R= 12r
7) K= 1:1·5 T= 29·4 Mt=44·- W= -2 R= 10·5r
8) K= 1:1·2 T= 29·6 Mt=30·9 W= -5 R= 8·8r
9) K= 1:1·03 T= 29·8 Mt=31·7 W= -30 R= 8·0r
10) K= 1:1·01 T= 29·8 Mt=30·1 W= -100 R= 7·8r
11) K= 1:1 T= 30 Mt= 30 W= ∞ R= 7·7r
12) K= 1·01:1 T= 29·9 Mt=29·6 W= 100 R= 7·6r
358400
487000
75500
23500
23200
14400
8900
5700
1300
300
300
48°
48°
48°
48°
47°
45°
44°
45°
42°
41°
41°
41°
Erdrotation
180°
72°
12°
Flutrücklauf
3·6°
Erdrotation
Flutrücklauf
0°
Stationäres Zeitalter
Z
N
3·6°
Erdrotation
Flutvorlauf
WEL-BÜRO ----Z-Wege, ······· N-Wege, —Z-u.N-Wege MAUER, Aug. 1927
T = Länge des Tages in heutigen Stunden, Mt = Länge des Monats in heutigen Stunden,
K = T/Mt = W/(W-1) = Kommensur bezw. Inkommensur, W = K/(K-1) = Anzahl der Zenithflutwellen je Umlg.,
J = Anzahl der Jahre zwischen den einzelnen Stadien für die ganze Kataklysmusdauer von rund 1000000 Jahren, welche Dauer aber auch halb oder auch mehrmals so lang sein kann.

Fig. 87 Drawing by Hanns Hörbiger in Mauer near Vienna from 1927, in which he depicts the calendary states of the pre-stationary to stationary stages of the tertiary cataclysm.


533
Charakteristische nachstationäre Stadien
im Tertiärkataklysmus
30° 60° 90° 120° 150° 180° 210° 240° 270° 300° 330° 360°
15) K = 1·24 : 1 T = 29·8 Mt = 24·4 W = 3·25 R = 6·7 r
16) K = 1·25 : 1 T = 29·8 Mt = 23·8 W = 5·– R = 6·7 r
17) K = 1·26 : 1 T = 29·8 Mt = 23·6 W = 4·85 R = 6·6 r
18) K = 1·29 : 1 T = 29·8 Mt = 23·– W = 4·5 R = 6·5 r
19) K = 1·32 : 1 T = 29·7 Mt = 22·4 W = 4·15 R = 6·4 r
20) K = 1·33 : 1 T = 29·6 Mt = 22·2 W = 4·– R = 6·4 r
21) K = 1·34 : 1 T = 29·6 Mt = 22·– W = 3·94 R = 6·3 r
22) K = 1·40 : 1 T = 29·5 Mt = 20·9 W = 3·5 R = 6·4 r
23) K = 1·48 : 1 T = 29·4 Mt = 19·8 W = 3·08 R = 5·9 r
24) K = 1·50 : 1 T = 29·4 Mt = 19·6 W = 3·– R = 5·9 r
25) K = 1·51 : 1 T = 29·4 Mt = 19·5 W = 2·96 R = 5·8 r
26) K = 1·80 : 1 T = 28·8 Mt = 16·– W = 2·25 R = 5·4 r
200 J
200 J
560 J
560 J
200 J
200 J
1200 J
1200 J
200 J
200 J
3480 J
67°
72°
74°
80°
87°
90°
91°
103°
117°
120°
122°
160°
39°
39°
39°
39°
38°
38°
38°
37°
36°
36°
36°
31°
Erdrotation
24
Flutvorlauf
WEL-BÜRO
----Z-Wege, ...N-Wege, ——Z-u. N-Wege
MAUER, Aug. 1927

T = Länge des Tages in heutigen Stunden, Mt = Länge des Monates in heutigen Stunden, K = T/Mt = W/(W–1) = Kommensur bezw. Inkommensur, W = K/(K–1) = Anzahl der Zenitflutwellen je Umfang, J = Anzahl der Jahre zwischen den einzelnen Stadien für ganze Kataklysmusdauer von rund 1000000 Jahre. Wie sich diese 12 enger aufeinander folgenden Stadien der Z- u. N-Punkt-Wegformen in das Kataklysmus-Finale zeitlich einordnen, ist aus Bild C von Blatt 529 zu entnehmen. Zugleich ist zu ersehen, wie die drei vorletzten Reinkommensuren bezw. die zwei letzten denuierend wirksamsten Einspur-Stadien Nr. 10 u. 24 (ungerade Ganz-Wellenzahlen 5 u. 3) und das dazwischen liegende vorletzte Paarspur-Stadium Nr 20 samt den an- u. zwischenliegenden 9 gezeichneten u. zahllosen nicht gezeichneten Inkommensuren allmählich ineinander übergehen

Fig. 88 Drawing by Hanns Hörbiger in Mauer near Vienna from the year 1927, in which he shows the calendrical conditions of the post-stationary stages of the Tertiary cataclysm.

and travelled around the globe in 19.6 hours *today* (Mt. = 19.6 hours of the legend). At that time we had a nineteen and a half hour month. The Trabant therefore overtook the Earth's rotation by around 10 hours a day with a rotation time of 29.4 hours today (T = 29.4 hours of the legend). However, this is the time when the sluggish water mountains simply could no longer keep up and had to gradually flow together into the advancing belt flood.

The fact that they still had to follow the daily pendulum swings of the rushing moon, even if already weakened, may only be mentioned briefly, and this because it justifies the necessity that the Tihuanaku Bay of the Y-strand line had to have a north-south strike direction and a narrow, approximately river-like winding and southwardly directed entrance, as it must indeed have been present in order to be protected from the encroaching, eroding shores of the leading equalising tides, The Tihuanaku Bay of the Y-strandline must have had a north-south strike direction and a narrow, approximately river-like winding entrance pointing southwards, as it must indeed have had, in order to be protected from the spreading, eroding shore surges of the advancing equalising waters out in the open ocean. Fig. 8 shows the often-mentioned Y-strand line as it cuts into the former bay floor south of Oruro. The bay was thus almost closed and may only have had a narrow outlet to the south, which intercepted the intrusion of floodwaters from the at- mating ocean and kept the tidal fluctuations within the Tihuana Sea basin within small limits.

In Fig. 88, the equalisation stage 24 is marked with a thick circle, as it roughly symbolises the Tihuanaku stage of the oblique Y strandline. According to the legend on the left of stage 24, the duration of the day was T = 29.4 hours *today.* This means that the days during the equalisation period of the Y-strandline and the harbour and sun gate city of Tihuanaku had a longer duration than is the case today, because today the day is known to have 24 hours and not 29.4 hours. This is also quite understandable when one considers that the pre-stationary receding tide had slowed down the rotation of the earth for many centuries and that the effective propulsion of the earth's rotation, which had been initiated by the advancing tide mountains and which was now *to be brought* to full effect by the water masses of the beginning advancing belt flood, had not yet advanced the earth's rotation so far that today's 24 hours of the earth's rotation had been reached. The permanent effect of the mighty "watermill

The "high tide" was still imminent at that time, which is why the Earth's rotation was still slow at the time of the Tihua- naku Y strandline. It still took 29.4 hours today. The days of the post-stationary equilibration were therefore considerably longer than today, and since the number of hours of the solar year - which had practically the same length as today - measured in *today's* hours counted 8760 hours then as today, it is clear that on the basis of Hörbiger's calculations the tertiary solar year at the time of the post-stationary Tihuanaku equilibration must have had 8760 : 9.4 = 298 *longer days* and not 365 shorter ones, as is the case today. However, these longer tertiary days also merged into the solar year without any significant remainder, just as the shorter days do today.

If the lengths of the days were already completely different from today's, the moon's orbit in the solar year showed even greater differences compared to today. In our time, Luna orbits the Earth's orbit not quite thirteen times a year, but at the time of the Tihuanaku strand line Y significantly more often! The legend in Fig. 88 in stage 24 shows us the duration of a lunar orbit around the Earth in today's hours, and in stage 24 of Hörbiger's drawing it was 533 : *month duration* Mt = 19.6 h *today's hours*. This means that in the twelfth of the year, which at that time we are no longer allowed to call by the misleading name of "month", as we already do inaccurately today, the cenomoon orbited no less than about 37.2 times, and converted to the year about 447 times! Given that the tertiary satellite is only about 6 Earth radii away (R = 5.9 r of the legend of stage 24 in Fig. 88), the inhabitants of Tihuanaku must have experienced about 200 solar eclipses per year and perhaps just as many lunar eclipses!

To summarise the above-mentioned conditions at the time of the Tihuanaku strandline Y:

1. *Daily duration about 29.4 hours today.*
2. *The number of these longer days in a solar year is about 298.*
3. *Cenomoon orbits in the annual twelfth 37 to 38.*
4. *Cenomoon orbits in the solar year about 447.*

This should clarify the calendrical relationships from the Tihuanaku period of the equalisation line Y to such an extent that we can calculate the above-mentioned five questions at least in part. The stone calendar of Tihuanaku, the so-called Sun Gate, must itself provide the answers to the remaining questions.

Question 1: *Was the solar year as long then as it is today?*

Answer: Yes, because the slight shrinkage that the Earth's orbit has suffered in the few millions of years up to the present day due to intraplanetary space drag can be disregarded.

Question 2: *Did the solar year also have 365 days back then, or did it have more or fewer days?*

Answer: As can be seen from stage 24 of Hörbiger's drawing 533 (Fig. 88), it had fewer days, namely 298 longer days on the basis of the indication of the aforementioned stage 24 ($T = 29.4$ h). Since the solar year then as now has 8760 hours, the number of tertiary days is calculated as 8760:29.4 = approx. 298 longer tertiary days.

Question 3: *Was the length of day T the same then as it is today, or is it possible that the days were shorter or even longer then than they are today?*

Answer: The days were longer than today, and therefore the solar year could not have had our 365 days, but only about 298 days, which were individually 5.4 hours longer than today's days.

Question 4: *Did they divide the solar year into real months according to the actual orbits of the moon, or did they do the same as today, dividing the year into a number of sections, about twelve?*

Answer: Hörbiger's calculations do not, of course, indicate whether the calendar was divided into real months, i.e. into actual lunar cycles. However, it is unlikely that it was done, because dividing the calendar into around 447 lunar orbits, i.e. an even greater number than there were days in a year, would have been quite impractical. It is likely that this was avoided and perhaps the number 12 was used as the basis for the division, just as it is today. It is quite possible that

It is possible that the signs of the zodiac were used for this purpose. We will see later when we discuss the stone calendar of Tihuanaku whether the solar year was divided into twelve in this way.

Question 5: *Did the calendar of that time indicate the actual number of real lunar orbits, i.e. the real months, or was it omitted in the same way as it is sometimes omitted today?*

Answer: Of course, this is also not shown in Hörbiger's drawing no. 533. It only contains the lunar orbits per year, to be converted from the lunar orbit in *today's* hours (Mt = 19.6 h of stage 24). Whether the calendar chiseler of Tihua- naku indicated the actual number of lunar orbits, i.e. the real moons or months, we will see in the renewed discussion of the solar gate calendar on the basis of the findings of the world ice theory.

We have now found the basis for the unravelling of the calendar from the WEL. geological findings of the oblique Y-strand line of Tihuanaku and from Hanns Hörbiger's calculations of the post-stationary calendrical state and can now turn to the WEL. discussion of the calendar itself, which was a calendar of Tihuanaku and not one of the present day.

We have seen in the discussion of Posnansky's interpretation that the calendar was set up in tabular form and that the meander frieze had to be used to place the solstices and the equinoxes in the right places. This was also practical because, as we have seen, the Sun Gate in the Kalasasaya was displayed in such a way that at the time of the equinoxes the sun was exactly over the centre of the Sun Gate, i.e. also over the centre of the equinox figures of March and September, and at the time of the solstices the sun deflected north and south in the same way as the solstice trumpeters are north and south of the centre figures. We had recognised that Professor Posnansky had succeeded in interpreting the twelve periods of the year with their solstices and equinoxes as well as the beginning of the year and spring, but were of the opinion that his interpretation was not satisfactory with regard to the days and other calendar indications. And what did not satisfy us here was not insignificant! Still awaiting interpretation the 290 wreath signs directly connected with the twelfth heads of the year, a further 157 individual signs on the actual calendar table (Fig. 82) remained unexplained, and the interpretation of a further 660 independent signs on the thirty winged and running sceptre-bearers of the special table to the right and left of the main figure of September, which Posnansky considered to represent the weeks of the decade, was missing. And so far we have not only lacked the numerical clarification, but also the symbolic one, even if we have to admit that symbolic interpretations are flawed. So there are 1107 independent signs on the entire relief of the Sun Gate that have not yet been interpreted or counted. These independent signs, which are almost without exception on stems, give the impression that they have to be counted in the same way as Posnansky did with the individual aureole heads and the thirty sceptre bearers, for a calendar is surely a counting calendar, as must be the case with all calendars. We cannot therefore carelessly pass by the 1107 signs that have not yet been counted or even explained without attempting to include them all without exception in the calendar as numerals - sign = 1. Only in this way can we do justice to the calendar as a counting calendar.

And since the author is of the opinion that the Sun Gate belongs to the town on the sloping lake, and thus also to the Y shoreline and the post-stationary tertiary equalisation stage, he now asks us to follow his explanations, which seek to prove that the frieze was created at the same time as the town and the sloping Y shoreline.

Under this assumption, the 12 yearly divisions, which are so

Posnansky's "monthly anthems" were not real months, but twelve annual periods, as we have them today. As Posnansky once suggested, the twelve annual periods may also have been categorised and named according to the 12 zodiacal pictures. Of course, there could not have been months, real moons, in the post-stationary Tihuanaku period, much less today.

Until then, Posnansky's interpretation was good and plausible and could also be valid for a modern calendar. The situation is different when it comes to determining the number of days in the solar year and the twelfth of the year.

In contrast to Posnansky's attempted interpretation, we maintain and must logically maintain that the days belong to the twelfths of the year.

and must therefore be closely connected with January, February, March and so on. Today we would inaccurately say that the days belong to the months, but we know that this would lead to complete nonsense in the post-stationary tertiary period, if we meant the real months!

Using Fig. 82, we can count the days at the individual points of the 12 sections of the year. On each of the 12 heads, of which the large one of the main figure in the centre of the calendar marks the beginning of the year and the onset of spring in the southern hemisphere of the earth, we see a radial wreath of simple individual symbols composed of independent condor, toxodon and lunar circle signs on the band. These different symbols have not, of course, been designed differently for artistic reasons alone; the taut, uniform execution of the system speaks against this. The same symbols are attached to each head in the same place and are directly connected to the head by ribbons (stems). The cap-like bonnets placed over some of the aureoles have no organic connection with the day signs of the heads and signify something symbolic, but always something very simple, e.g. "Condor breeding season", "condor mating season", "fishing season". It will be shown later that they are also intended to symbolise numbers.

The day-number signs - sign = 1 - are now directly bound to the points of the twelfths of the year, where they also belong. We shall see that we have no need, as Professor Posnansky had to do, to tear the days away from the twelfths of the year and look for them in other places where they did not logically fit. In Figs. 89 and 90, June and February have been emphasised and provided with counting instructions. But Fig. 82 should also be clear enough to be able to check the number of tertiary days in all twelve sections of the year. As far as the differences in the use of symbols within the series of day signs are concerned, it should be noted in advance that these are "moon" and "sun" signs. Their meaning will be explained later. For the time being, we are only interested in the independent symbol, which is directly connected to the head by a stem, as a single counting sign: Sign = 1.

If we count the signs of the aureole in June, for example (Fig. 89), we get 24 signs, i.e. 24 days of June. If, on the other hand, we count the ray

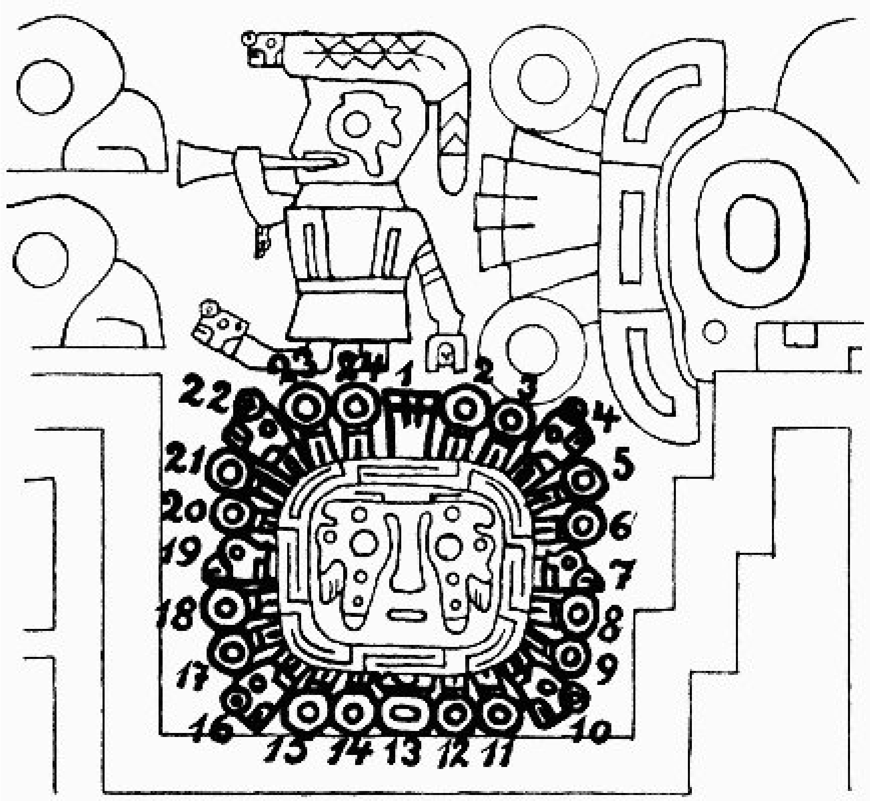


Fig. 89: Twelfth of the year June of the calendar frieze of Tihuanaku with emphasised day signs and with a counting instruction.

If we subtract the sign of the wreath of days in February, we initially also get 24 signs or days, but with an additional flying fish as an additional sign of the day (Fig. 90), which indicates that in this period of the year, February was exceptionally counted not as 24 but as 25 days. The crest above the day wreath can also be considered for a later counting of a different kind. It also has the symbolic meaning given above, which is probably very simple. It probably means that February was very favourable for fishing in Tihuanaku Bay.

If we have counted the twelve wreaths around the faces, there are 24 day signs per head almost throughout, except in February and April, when there are 25 days each. In my opinion, the added fish is so obvious that even sceptical readers will understand it.

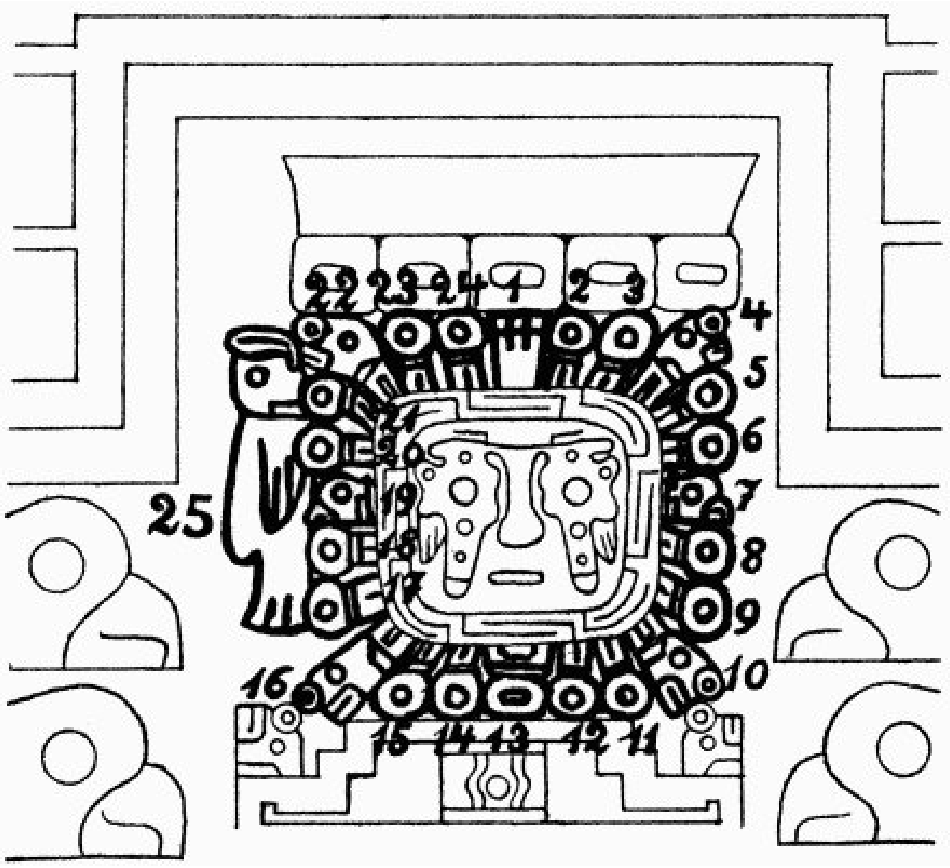


Fig. 90 Twelfth of the year February of the calendar frieze of Tihuanaku with emphasised day signs and with a counting instruction.

if the author believes that these are "added" days, i.e. exceptions to the rule. At that time, the completely uniform division into 24 days per twelfth of the year was not quite enough, so the Tihuana people were similar to us, who also have to change the number of days in the month in order to get by in the year.

The Tihuana year must not have had 288 days (12 times 24), but 290 days (12 times 24 + 2 days), whereby it is clear that the days in the post-stationary Tertiary period of the Tihuana period must have been longer than today's days. They therefore still rose in the solar year, precisely because they were longer than today.

In conclusion, we note that *the Tihuanaku stone calendar indicates 290 days for the solar year.*

We also note that *the twelfth of the year, today incorrectly called "month", had 24 longer days than today, and only February and April had 25 days each.*

This solves the daily riddle of the stone calendar in a very simple way, the riddle that caused Posnansky so much difficulty that he finally had to come to the conclusion that the wreath signs, despite their large number of individual signs, meant something symbolic, such as the position of the signs of the zodiac in each period of the year. With the key of the world ice theory, the clarification becomes easier and, I hope, also more plausible. The calendar gives the correct actual numbers for the days in the right places, and the symbolic meaning recedes into the background, at least for the time being.

Now for the real months! Did the calendar also indicate them?

A glance at the extremely large number of independent individual signs of a simple and composite nature shows that this is not initially recognisable. If we want to look for the real months, i.e. the moons or lunar orbits around the earth on the calendar, we must first realise the approximate number of lunar orbits of the tertiary satellite.

Since the solar year, then as now, had and has approx. 8760 hours *today*, it contained 8760 . 19.6 `h` = approx. 447 *months* at the time of the `Y-strand line` of stage 24 of drawing 533 (Fig. 88). And these were real months, real cenomoon orbits, not fake months as today, i.e. those that do not correspond to the orbit of the moon. Since at the time of the `Y-strand line,` 447 orbits of the tertiary satellite, which was already quite close to the Earth and had shrunk to around 6 Earth radii, were necessary for one solar year, it was reasonable to assume that these lunar orbits would also have to be shown as real months on the stone table of the Tihuanaku Sun Gate.

At first glance, it seems almost impossible to place this high number of real months on the calendar frieze if one did not want to condemn the entire panel to obscurity, and the task was certainly not easy for the sculptor of the Tertiary period if he wanted the number 447 to be legible anywhere, namely in his sign-picture frieze.

The aim was to make the lettering legible, always maintaining the principle that one character equals one.

We modern humans have it easier. We simply write three numbers next to each other, namely 4, 4 and 7, and the number 447 of the real lunar orbits is legible in a small space.

The sculptor of the Tertiary period had to proceed differently. If he had already represented the number 12 by repeating the twelfth section of the year twelve times and, by placing the solstice trumpeters, had also pointed out to those unfamiliar with reading that we were dealing with an annual calendar, if he had also placed the 290 day signs around the twelfths of the year in groups of 24 or 25, he still had the difficult task of somehow incorporating the large number 447 of the real months into the calendar. And if this was not clear enough to see through, he had the task of *pointing out quite clearly* how the months were to be read and counted, both for the whole year and for the individual twelfths of the year. If it was possible to provide all, or at least one or the other of the twelfths of the year with the real months, this could not be sufficient for understanding.

This meant that 447 : 12 = 37.2 independent individual signs had to be applied to each annual twelfth to indicate the number of actual lunar orbits. It is clear that this was not possible for most of the small twelfths of the year within the meander frieze due to lack of space. There was only sufficient space for this on the full figure of September, which still had the body under its sign-wreathed head, which its 11 siblings in the meander lack, and on which the necessary large number could be placed. And since fractions cannot be expressed in pictorial writing, or at least only with great difficulty, instead of 37.2 lunar orbits only 37 or, counting the thirty-eighth orbit that had begun, 38 numerical signs had to be depicted.

The reader is asked to check the numerical signs in Fig. 91, which are highlighted in dark and provided with counting instructions, and to compare them with the light image in Figs. 93 and 94, which shows the same period of the year, September. On September we already know the 24 day signs that lie in the wreath around the face. In addition to these, we find 38 *independent numerical signs* on the body and on the sceptres of the September full-length figure. This number must be conspicuous because it is connected with almost corresponds to the number 37.2 calculated above for the cenomoon cycles per annual twelfth. If we know that this fractional representation is difficult for pictorial writing, then we can speak of full agreement. For the time being, the reader may still be of the opinion that it is quite arbitrary not to count the 24 known day signs in the head wreath of September, but he will later realise that these 24 day signs are in fact not to be counted according to the sculptor's instructions. This instruction will be discussed below.

So for the time being, let us stick with the 38 other signs found. We suspect that the Tertiary sculptor has managed to place the number of real cenomoon cycles, i.e. the months, for the twelfth of September at least on the twelfth of September, on which there was sufficient space. Of course, the find has *no probative value for the time* being, because it could be a strange coincidence that fools those who want to read something out of an old pictorial work, whatever the cost! Then, for the time being, we still lack any clear indication that the sculptor actually meant the months with these 38 signs and not something completely different. We can see straight away that the same number 38 could not be applied to the small heads within the meander frieze, and we can save ourselves the trouble of trying to find anything of the sort from them. But once we have formed the suspicion that the 38 signs on September could possibly mean the moon's orbit in the twelfth of the year, we can hope that the sculptor has somehow also depicted the number 12 times 38, namely around 447, i.e. the number of cenomoon orbits in the whole year. And since we are talking about the moon's orbits throughout the year, the number 447 logically had to be poured over the entire annual frieze in order to express the fact that 447 *moon orbits took place* during 290 long days in the solar year. At first this seemed quite improbable to the author, so that it was only late in the day that he made friends with this high number of months. Nevertheless, one evening he simply began to count, considering that up to that point all the figures had arrived at their calendar meaning simply by counting the individual signs. After all, it was a counting calendar!

However, counting all the individual characters on the entire year table (Fig. 82) resulted in 447 *independent characters*! The surprising result was therefore around twelve times the circulation figure found in September 38. nothing more can really be asked of a stone calendar!

Since the cenomoon must orbit the earth 447 times a year at a distance of about 6 earth radii (stage 24 of fig. 88), i.e. the month counted 19.6 present-day hours (stage 24 of fig. 88), the result of counting the 38 (37.2) signs in September and the 447 signs on the entire annual frieze (fig. 82) was so astounding that the suspicion arose that there was a double coincidence here.

If, however, there is no coincidence, then the figure Mt = 19.6 h of stadium 24 of Hörbiger's calculation on drawing 533 of August 1927 (Fig. 88) would no longer have to be corrected, but would *correspond with* an accuracy of *100 per cent to the data of the Sun Gate*!

The legend of Hörbiger's drawing no. 533 (fig. 88) reads.

K .48: 1

T = 29.4 h Mt

= 19.6 h W =3

.0

R =5 .9 r

The reader immediately recognises that the number Mt = 19.6 h agrees one hundred per cent with the indications of the Sun Gate calendar, but that the number T = 29.4 h does not quite show this exact agreement, but only an approximation of about ninety-eight per cent, which, however, is probably quite sufficient to recognise the number of *today's* hours present on the gate for a tertiary day of stage 24, namely about 30 today's hours (30.2). And it must be emphasised again and again that Hanns Hörbiger's drawing no. 533 was not "made up" after the finds on the Sun Gate, but that it was available for almost three years before the first drawings of the calendar frieze were made after the cast of the Sun Gate on the author's drawing board.

In order to facilitate the verification of the count, the following counting method is suggested, for which the text is accompanied by the special figures 91, 92 and 95 with darkly emphasised and numbered individual characters.

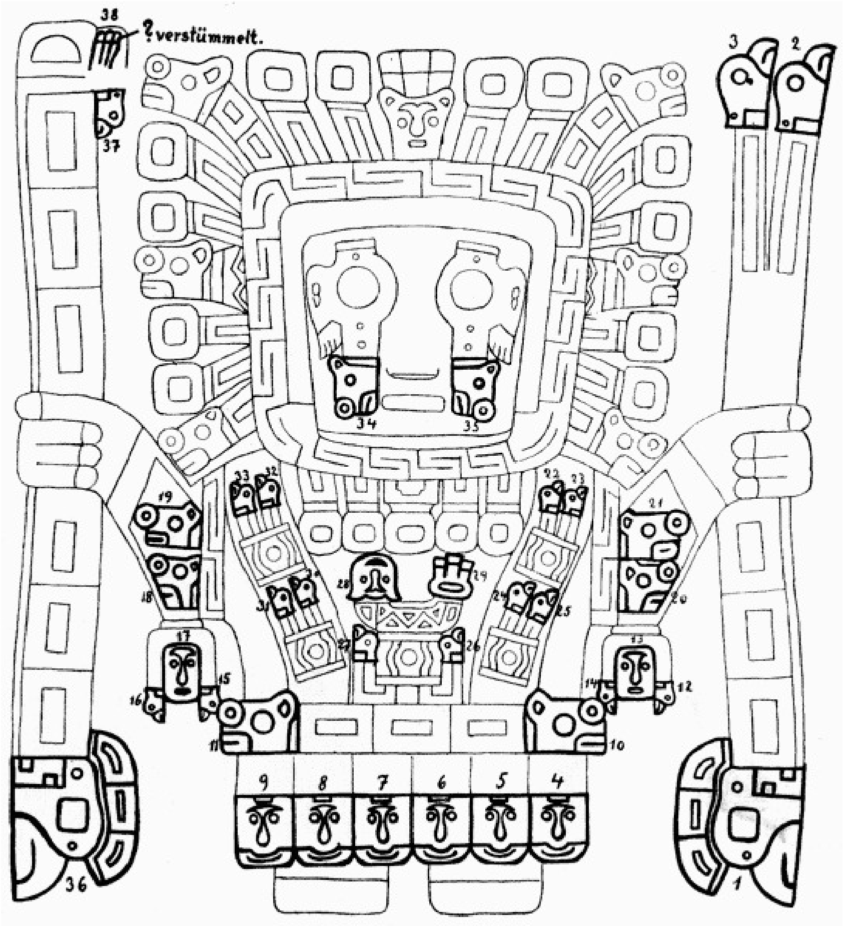

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Fig. 91 Drawing of the main figure September of the calendar frieze on the sun gate of Tihuanaku with counting instructions for the determination of the caenomoon cycles in the twelfth of the year. The numbers and characters are emphasised.

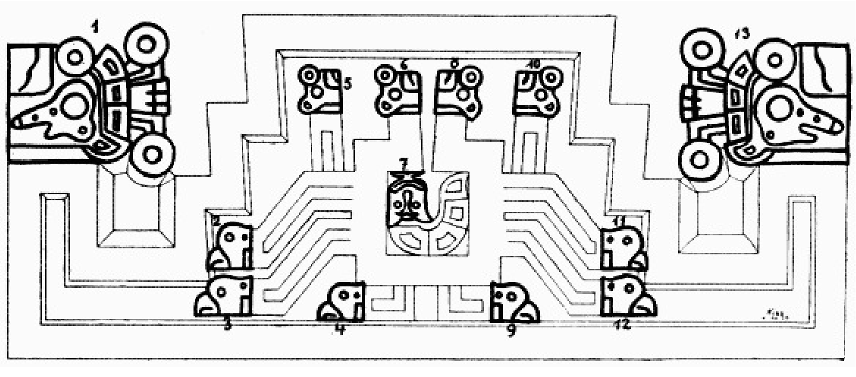
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Fig. 92 Drawing of the base of the main figure of the twelfth of September, the calendar frieze on the Sun Gate of Tihuanaku, with counting instructions for the existing numerals. Characters and numbers are emphasised.

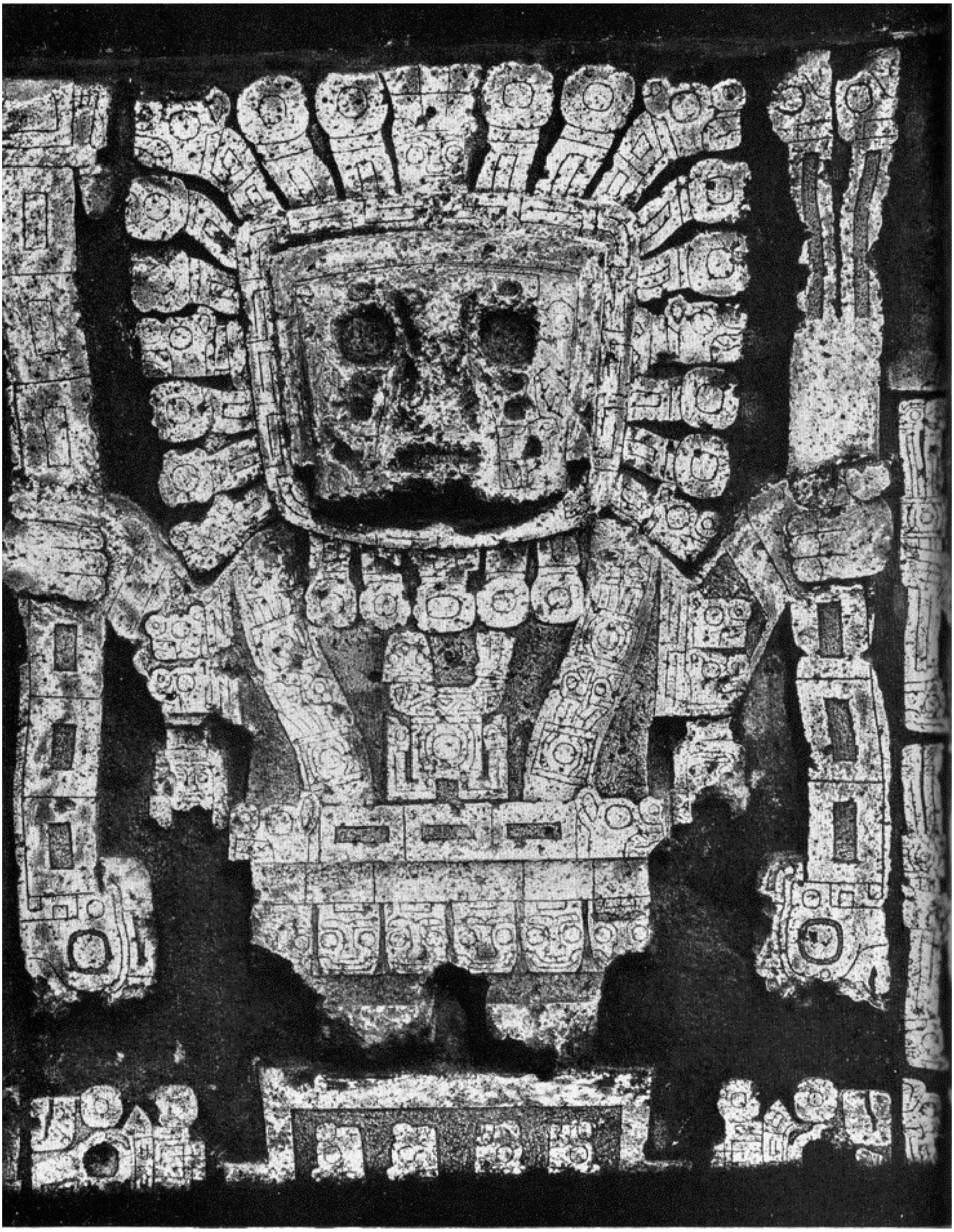

Fig. 93 Photograph of the main figure, the twelfth of September, of the calendar frieze on the sun gate of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

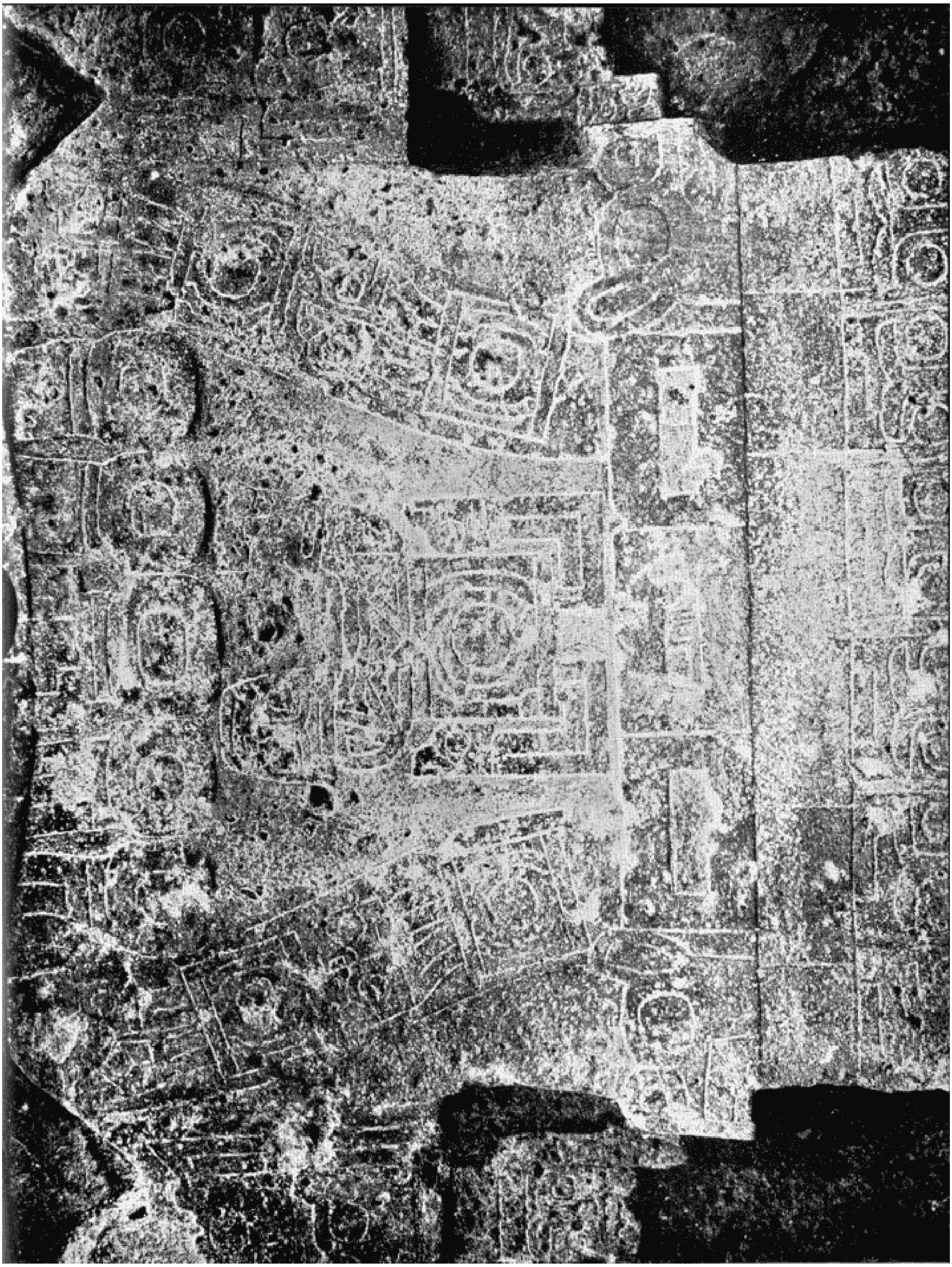

Fig. 94 Photograph of the lower part of the main figure, the twelfth of September, of the calendar frieze on the Sun Gate of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

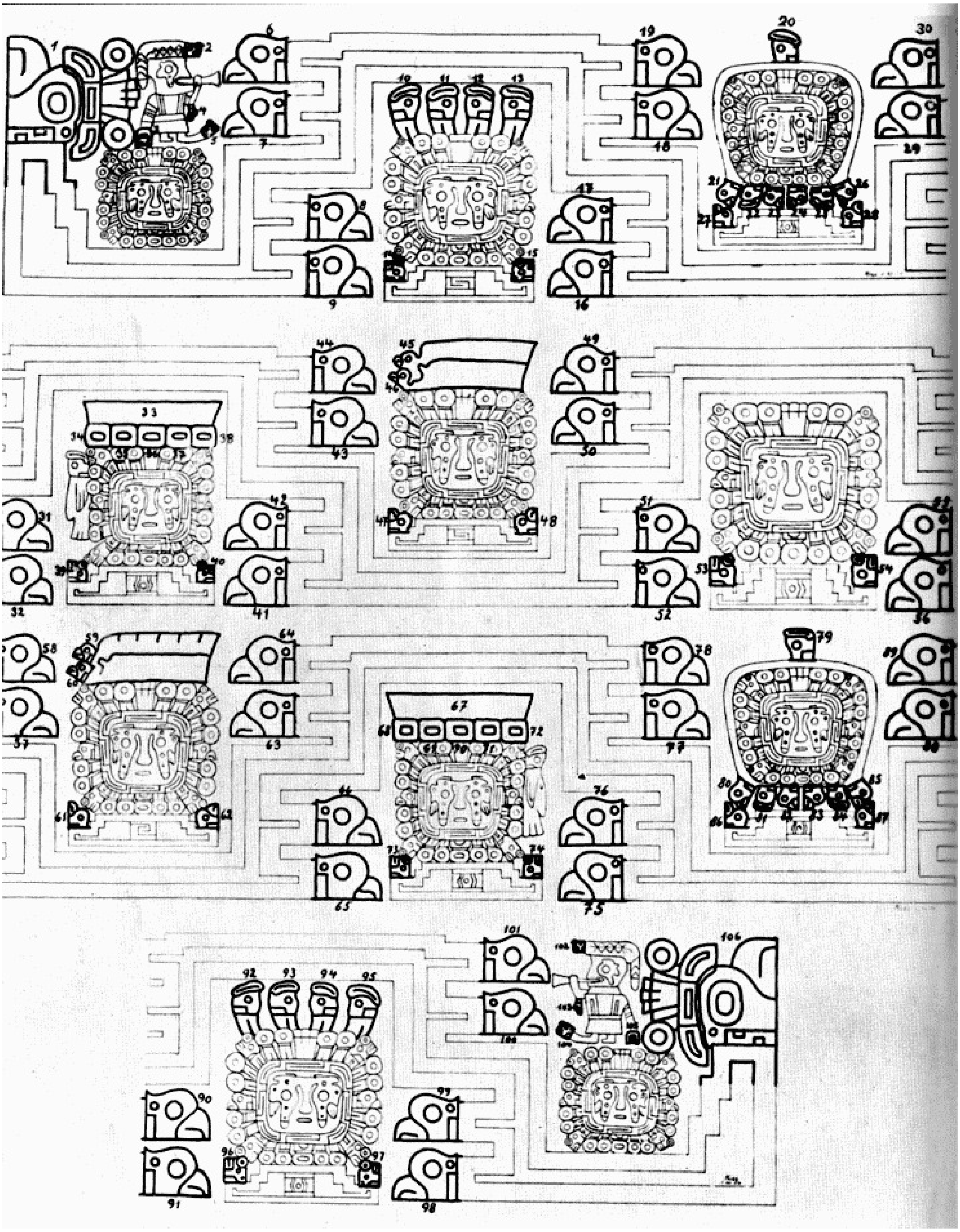
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Fig. 95: Composite drawing of 11 annual twelfths of the meander frieze of the calendar on the Sun Gate of Tihuanaku with counting instructions excluding the signs in the ray wreaths around the annual twelfths. Signs and numbers are emphasised.

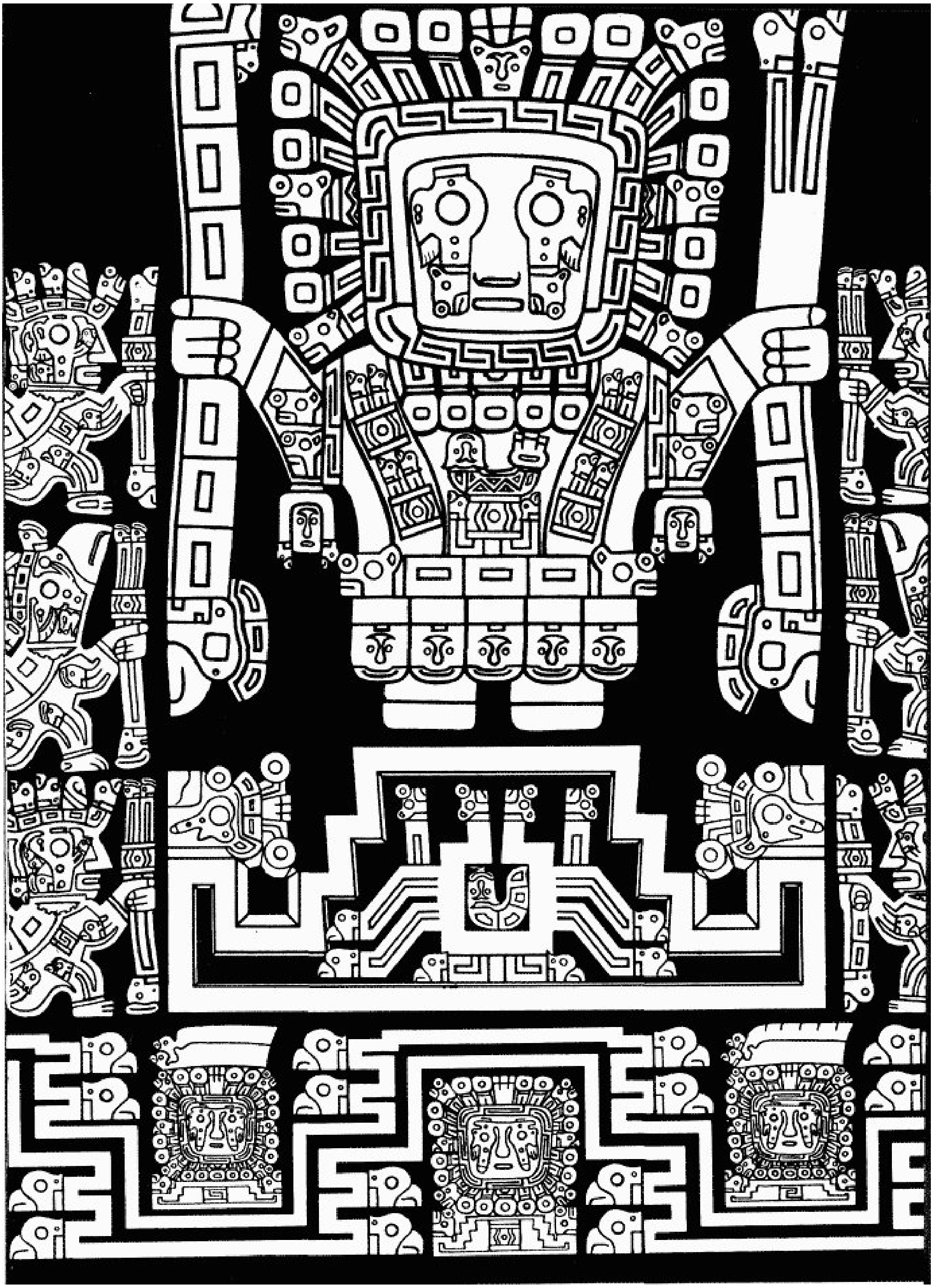


Fig. 96 Drawing of the centre section of the calendar frieze on the Sun Gate of Tihuanaku.

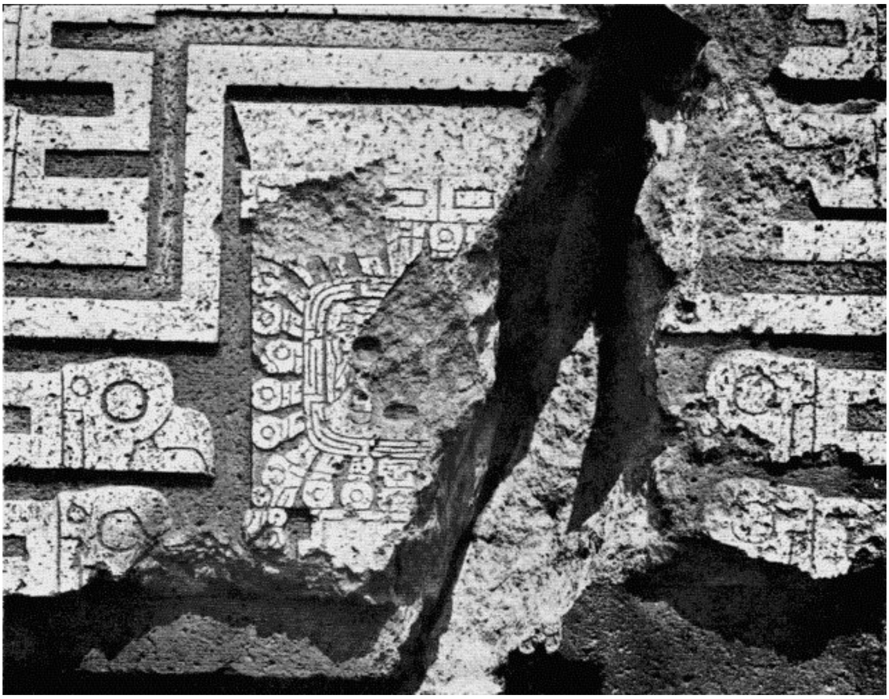
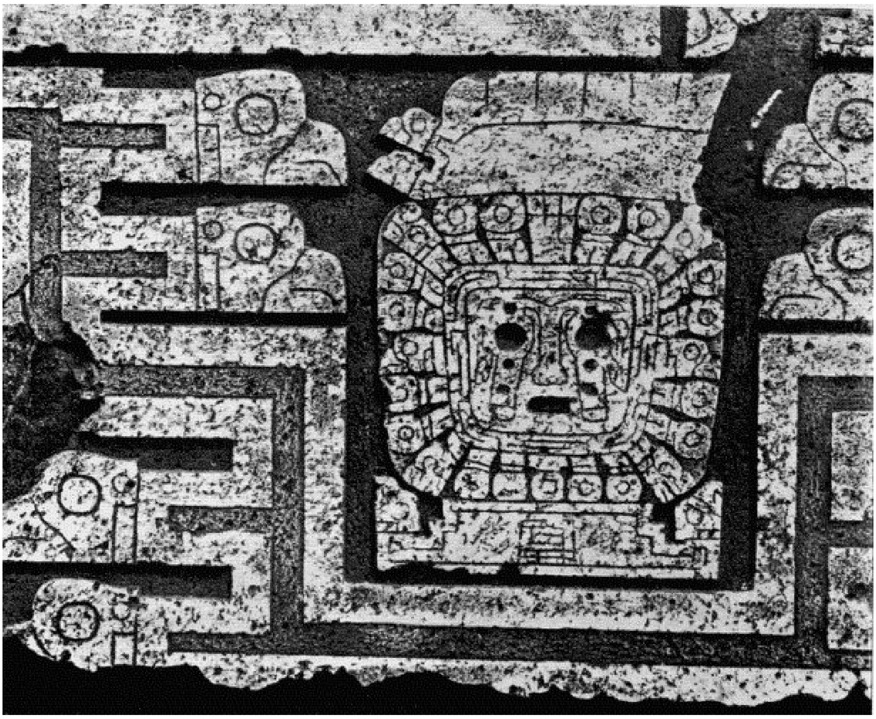


Fig. 97 Photograph of the twelfth of February (April) from the meander band of the calendar frieze on the sun gate of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.

Fig. 98 Photograph of the twelfth of the year August (October) from the meander band of the calendar frieze on the sun gate of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.



1. Centre main figure (Fig. 91) 38 characters (without the 24 day characters)
2. September base (Fig. 92) 13 characters
3. Meander frieze of the 11 year
twelfth (Fig. 95) . . . . 106 Characters (without the 266 day characters)
Plus without the day characters . . . 157 characters
The signs of the day ....290 characters
447 characters.

Furthermore, attention is drawn to the following with regard to the inspection.

1. Only Figs. 91, 92 and 95 are suitable for counting, as small drawing errors have been made in Figs. 79, 80 and 96. In order to demonstrate the correctness of the - minor - alterations to Figs. 79, 80 and 96, the corresponding photographs Figs. 93, 94 and 84 have been placed next to the drawings, as the photographic plate does not err, as happened to the author's eyes in rare cases when he drew Figs. 79, 80 and 96 after the cast of the Sun Gate. In the individual count, crowned, uncrowned and double-crowned condors have not been distinguished because the difference is unknown. Presumably this difference is also only a symbolic one.
2. The annual twelfths of February and April each bear a block (?) on 5 lunar signs as bonnets. The block is obviously unfinished or damaged (Fig. 97), but shows a clear tail end of a condor, as a comparison with the bonnets of the twelfths of August and October shows (Fig. 98), where two condors sit on top of each other. The "block" on the annual twelfths of February and April has therefore been counted as one sign each.
3. Only those signs have been used in the counting that we have already learnt about in the counting of the days in the ray wreaths of the year's twelfth heads, i.e. condor, toxodon, puma and similar heads and symbols such as the three-split (the crown of a toxodon head) and the moon sign (double circle on the ribbon).
4. Despite its small size, the mark on the elbows of the trumpeter figures of the solstices should be counted. It is badly mutilated in the original (Fig. 84), but fortunately it is still clearly recognisable as a small condor head.
5. The 660 characters on the special table of winged and running sceptre bearers to the right and left of September must of course not be included.

because the lunar orbits *can* and *must* only be included in the annual frieze. The table of winged runners on both sides of September will be discussed and counted below.

Once the reader has verified the existence of the 447 independent numerical signs on the year frieze, there can hardly be any doubt about the surprising agreement of the counting result with the indication on Hanns Hörbiger's drawing 533 (Fig. 88), `Mt` = 19.6 *current* hours of orbital period of the calendar moon per tertiary day (real months) or 38 (37.2) real months in the annual twelfth or 447 real months in the solar year. Nevertheless, the reader will presumably be sceptical and miss the strict logic when he sees that these two numbers 447 and 38 appear seemingly without any indication of their origin and purpose, once scattered over the entire surface of the annual frieze and the other time only on the frieze of September, without the fact being made clear that it is really the number of lunar orbits being sought, i.e. the real tertiary months. In particular, the discerning reader may miss the number of lunar orbits during the day.

It is virtually impossible for a sculptor who works with ideographic signs to depict fractions. If he wanted to represent the number of real months per day, he would have had to express the number 1.6 (round) with his primitive counting signs - sign = 1 - and he simply could not do that. As we have seen, the difficulty of placing the real months in the twelfth of the year was so great that the sculptor had to limit himself to placing them only once, in September, the main twelfth of the year. But that he perhaps knew how imperfect this single depiction was, precisely because of the impossibility of representing the fraction 37,2 - the artist placed 38 instead and counted the thirty-eighth, begun cycle in full - will become clear to the reader below.

The sculptor seems to have found another way to represent the break in the number of lunar revolutions per day. Posnansky's research shows that the double circle on the ribbon, the most frequent sign of the number of days around the twelfth anniversary of the year, represents the moon. This lunar representation occurs no less than 17 times within the 24 longer tertiary days of the twelfth of the year. The 7 remaining signs of each annual twelfth (apart from the flying fish), namely the Toxodon and Condor heads, signify "light" and "sun".

Accordingly, 17 days of the twelfth of the year are dedicated to the moon, while 7 are dedicated to the sun and light. (Fig. 89.)

Perhaps, or even probably, this was not without reason. The brittle material and the equally brittle method of representation in pictorial writing failed when it was necessary to depict all orbits in all annual twelfths individually on each ray antlitz. It succeeded - with two exceptions, which will be discussed below - only once, namely on the body of September. On the other hand, it was possible to recognise those days on which the moon "beat" the sun and, as it were, trumped it, thus dominating the day. For post-stationary tertiary man, the sun and moon were at least equal celestial bodies; perhaps even the moon, which orbited the earth at a distance of only about 6 earth radii, made a much more significant and also more terrible impression than the much smaller sun.

So on the days when the sun was eclipsed by the crossing of the cenomoon (the cenomoon, unlike the sun, rose in the west and set in the east), the moon predominated in the sky and was stronger than the sun because it had the power to eclipse it for a certain period of the day. Those days on which the moon was predominant were therefore marked on the stone calendar with the lunar sign (double circle on the band). On the other days of the twelfth of the year when this did not happen, the sun ruled over the caenomoon, as it were, and was therefore stronger than it. These days, on which the sun was predominant, could therefore be labelled with the sun sign.

If the tertiary satellite had had its orbit at that time exactly in the ecliptic plane, which almost coincided with the Earth's equatorial plane due to the uprighting of the Earth's axis by the leverage effect of the cenomoon on the Earth' s equatorial bulge, then, quite apart from its great proximity to the Earth ($R = 5.9\ r$), the Sun would have been eclipsed each time the orbits crossed. However, since the orbit of the Cenozoon, similar to that of our modern Luna, was probably inclined at a certain angle to the Earth's equator, it is likely that solar eclipses did not occur from time to time. But it must have been far more common for such eclipses to occur.

The condor and toxodon light symbols seem to indicate how often the solar eclipses did not occur and at what daily intervals.

The absence of eclipses can be said to be half of the radially arranged day signs around the annual twelfth heads. This absence of eclipses occurred 7 times in the course of a twelfth of a year of 24 or 25 longer tertiary days. On these 7 days the light, the sun, prevailed. On the other 17 days, however, it was inferior. These were the days of the moon's dominion, the sun's finals. And it is quite plausible and probable that during the post-stationary caenomoon period of the Tihuanakue epoch of "equalisation", the twelfth of the year with its 24 or 25 days and its 37.2 real months had solar eclipses on 17 days. This would also be a plausible explanation for the fact that the post-stationary Tertiary sculptor so frequently (17 times) used the lunar sign as a symbolic day number.

If this interpretation is correct, and it is at least probable, then the tertiary man of the city on the sloping lake would have *experienced 204 solar eclipses* in the course of a solar year with 447 real months during 290 longer tertiary days at 30.2 present-day hours*, namely 17 per twelfth of the year*.

Today, however, it is no longer possible to prove that the cenomoon in the stage of the post-stationary Y-strand line has caused 204 solar eclipses per year, since neither the angle of inclination of its orbit to the earthly equatorial plane, nor the nodal orbit and apsidal wandering period nor its librations are known, but this number of 204 solar eclipses per solar year does not seem to be entirely improbable with a satellite distance of 5.9 earth radii and a satellite orbital period of 19.6 *present-day* hours. And if the reader becomes more and more familiar with the calendar in the course of the further discussions and begins to believe it, he will also trust the symbolic interpretation of the day's signs, which give the number of solar eclipses.

It is this representation of 17 solar eclipses per annual twelfth or 204 solar eclipses per solar year that prompted the author of this work to make use of the surprisingly found 447 lunar orbits per year and 38 (37.2) per annual twelfth. Their presence on the annual table, for the time being only visible and transparent to the reader as pure figures without any indication of their meaning, also justified the interpretation of the solar eclipses and the days that were spared from them. All this because at the time of the Y strandline the conditions described and indicated on the sun gate could have been *like this and no other.*

But that the sculptor has also directly and almost literally stated that these 447 and 38 signs are in fact lunar orbits in the year and in the twelfth of the year, *and nothing else*, will be explained below.

A closer look at the moon and light symbols of the day signs in the yearly twelfth wreaths reveals that after two "moon" days (i.e. solar eclipse days!) there was always a "light" day (day without solar eclipse). But also the incidence of the occurrence of the solar eclipses seems to be indicated on the coronae, i.e. when once a "solar day" failed to occur, when once the regular arrangement alternating between two solar eclipse days and one light day did not work out and therefore five solar eclipse days occurred one after the other. The five consecutive "moon" signs under the *chins* of the counters seem at least to indicate that such an irregularity occurred. (Fig. 89.)

Since the calendar has proved to be a logically constructed structure until the 288 or 290 longer tertiary days have been explained - as logically as the type of depiction and material allowed, it seems quite conceivable to the author that the sculptor, as best he could under the given circumstances, placed the number of real months in the year, namely 447, on his annual calendar *deliberately* and not *by chance.* And just as *deliberately,* he placed the 38 (37.2) caenomoon orbits per annual twelfth on the full figure of September and also ensured that the number of solar eclipses and the number of fading solar eclipses was shown, which for the post-stationary tertiary Tihuana Humans was in direct correlation with the frequent caenomoon orbit and the significant proximity of the Earth's satellite ($R = 5.9\ r$). The artist therefore had every prospect of being understood by the people of his time, and it was for them that he had created the stone calendar, but not for the pre-stationary Quaternary man of the Luna period, i.e. for those of us living today who are unfamiliar with the calendrical conditions of the post-stationary Tertiary period.

The author would certainly have refrained from attempting to prove such monstrous things, namely to interpret the cenomonde circulation of the post-stationary Tertiary period of the often mentioned stage 24 of drawing 533 (Fig. 88), if the almost complete correspondence of the number 447 with the quotient 8760 : 19.6 = approx. 447 had not been so conspicuous.

would have been. It is, after all, an easy calculation to form the same quotient in all the other stages of figures 533 and 531 (Figs. 88 and 87) and to compare it with the quotient 8760 : 19.6 = approx. 447. All these quotients will not agree with the found number 447 of the Sun Gate calendar, with this number of stage 24, and all the less so the further one goes in the examination of the quotient according to
"both sides", i.e. past and future, from stage 24. It is advisable to carry out this check yourself in order to ascertain the astonishing correspondence between the statements of the calendar frieze of Ti- huanaku and those of stage 24 in Fig. 88.

And since stage 24 is approximately that of the `Y-strand line`, the stage of the inclined lake and the harbour metropolis of Tihuanaku and thus also of the Sun Gate and the stone calendar, the assumption gains in probability that the numbers 447 and 38 found are actually the number of the cenomoon cycles or the real months in the year and in the twelfth of the year, and only in this stage and in no other.

If the author had made his own assumption of the moon's orbit at the time of a specially created and marked stage "24a Sun Gate", then a one hundred per cent agreement with the data of the stone calendar would perhaps be more contestable, even if the justification for the creation and marking of such a stage is certainly present. However, since the number `Mt` = 19.6 `h` (*today's hours*) for the Cenomanian moon orbit was taken from an already existing stage of *equal value* drawn by Hanns Hörbiger in 1927, it is difficult to believe that this correspondence is a coincidence.

Nevertheless, it would be almost impossible for anyone who has not studied the stone calendar in detail to find the numbers of the cenomonic cycle. The calendar would be unusable for popular use, at least as far as the real months are concerned. It would therefore be necessary to demand that the sculptor should have given unambiguous instructions, from which it would have to be clear how the part of his calendar that indicates the number of the cenomonic cycles should be read.

And he did indeed give such an instruction!

One for finding the number of lunar orbits in a solar year and one for finding the number of lunar orbits in a september year.

ber. In connection with this, a third instruction was given by the sculptor to eliminate the possible error in the counting of the moon's orbits in September.

Of course, one cannot expect these instructions to have been given in printed German, but, as the reader will now realise, they are of a transparent clarity and a distinctness that can hardly be surpassed. Such clarity was absolutely necessary for a pictorial calendar. The instructions had to be written in such a way that errors were ruled out, that they could only be read unambiguously. Every other reading had to lose its meaning and only the one, very simple and strictly literal instruction had to be followed.

The author asks you to take part in this brief interpretation of the symbol, or rather in the reading of a simple pictorial inscription which, in my opinion, can be found on the *staircase plinth of the main figure, September,* with such clarity that even a child could read it (fig. 92). In keeping with the importance of the instruction, it is placed in the centre of gravity of the entire frieze, i.e. at the point where the eye meets when passing through the Sun Gate. (Fig. 78.)

The author is well aware that the interpretations of pictographs are dubious things. Everyone will read something different from an inscription. However, the inscription on the pedestal of September on the stone calendar of Tihuanaku is unambiguous. It essentially consists of twelve characters of an independent kind, which we know as numerical signs from the wreaths of the lanterns and from the other signs of the annual frieze, and also of a thirteenth sign, namely a crescent-shaped worm-like animal carrying a puma's head, i.e. the moon symbol. On Tihuanaku ceramics, the puma, which in the ideography of prehistoric South Americans is regarded as a *lunar animal,* usually wears the moon disc on a ribbon around its neck. The puma's head is carved on the base on a *crescent moon body* and can be recognised by its wide maw and whiskers (Fig. 100). Its worm-like body is obviously *deliberately* curved *in a crescent shape* and is enclosed in a box that is open at the top, towards the main figure of Sep- tember, with a widening gap, a "street". Surrounding the box are the 12 other signs, their bands forming the box in which the puma moon is enclosed.

And this enclosure of the puma moon is the centrepiece of the very simple picture writing and thus the centrepiece of the calendar.

The observer, the tertiary man of the post-stationary Tihuanakue epoch, now poses two questions to the calendar relating to the orbits of the moon.

1. How many times a year does the moon orbit the earth?
2. How many times does the moon orbit the earth in a twelfth of a year?

To the first question, how many times a year, the inscription on the pedestal now answers literally in German translation, but also in translation into any language of the earth (Fig. 92). "*The moon is enclosed (contained) in us twelve signs!*"

The reader may try to give the illustration a different interpretation. He will not succeed. The meaning of the many individual symbols in *the twelve sections of the year* is clearly and unambiguously engraved on the pedestal. We see the 12 solar animal heads (Condor and Toxodon) as *abbreviated symbols of* the twelve annual twelfths of the calendar frieze, and, so that any error in the judgement of the 12 signs is excluded, the *caesura endings are marked* with energetically raised double-crowned solar animal heads, exactly as it is done at both ends of the yearly table behind the solstice trumpeters, where the double-crowned solar animals also raise their heads as final signs. *Enclosed* in the box, however, is the crescent-curved *puma moon* within the 12 sun signs, thus enclosed by the *abbreviated symbols of the twelve twelfths of the* calendar. The reference given. "*The month is enclosed in the twelve of us!*" is, in my opinion, *so compelling* that the tertiary observer was almost knocked on the head with the solution. He had nothing more to do than to follow the given instruction *exactly*. He recognised in particular from the meaningful repetition of the caesura terminations on the staircase socle that it must actually be a short repetition of the 12 year twelfths. He saw the puma moon included in these "abbreviated" twelfths of the solar year and immediately realised that they must be the larger twelfths of the year in the entire table of the calendar frieze, which could only be indicated in abbreviated *form* on the staircase plinth.

So all of these should contain the number of real months in the tertiary year?

The observer followed the hint of the pictorial writing and began to count all the signs on the year frieze without exception, which he already knew as numerical signs - sign = 1 - and found, probably supported by the former coloured treatment of the individual signs, perhaps also under the instruction of a tihuanaku astronomer, the correct number 447 *as the number of the real months, namely the cenomonic cycles in the solar year.*

Question 2, how often the moon revolves in the twelfth of the year, is also answered very simply and unambiguously by the inscription on the pedestal. *From the box in which the puma moon* is enclosed, a road leads upwards to the main twelfth of the year, September. Keep looking there!*

The tertiary observer of the calendar also followed this clue, counted through the numerical signs known to him on the body, face and sceptres of the full figure of September and found the correct number 38 (37.2) *of the real months in the twelfth of the year*.

He knew, or at least he could have known, that this time he was not allowed to count the numerical signs of the day attributes arranged in a radial pattern around the September antinode, because the pictorial script only gave the instruction for the *total count* for question 1, the question about the number of annual cycles, namely that the annual number of cenomoon cycles was to be searched for and found within all twelve annual twelfths. With regard to the second question, the pictorial writing only indicated the direction where the relevant numerical signs were to be found, but not the method of counting, and the contemplating tertiary man himself knew from his daily experience that there could and must not be much more than 35 to 40 signs. Therefore it was easy for him to find and count the 38 signs of the cenomoon cycle in the twelfth of September without any special counting instructions. The remaining daily signs came to him

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* Professor Nestler in Prague thinks the crescent-shaped curved animal in the box of the plinth is a fish· He is obviously led to this conclusion by the fish-shaped body. (Cf. Mitteilungen der geographischen Gesellschaft in Wien, Jahrgang 1913 Vol. 56 No. 4 Page 234.) Professor Posnansky, on the other hand, stated on the basis of comparative criticism of other depictions of pumas that it was a puma head. But even if Nestler were right, this would not change the meaning, because the fish is also a symbol of the moon.

The number of rounds would have been far too high for the approximate number of rounds known to him from daily experience.

After all, the sculptor seems to have reckoned that there would still be people among the viewers who would still not understand the street reference on the September pedestal and who, contrary to all expectations, would also be able to count the 24 day signs. And since the artist seems to have had the ambition to design his calendar so clearly and distinctly that even the poorly gifted would be able to read it, he decided to add a new reference that removed any doubt about the counting method of the 38 cenomonic signs in September.

He placed this instruction *on the centre of the body of the twelfth of the year September in* order to eliminate even the last doubt as to how the 38 signs of the lunar cycle were to be found and counted. To this end, he placed a repetition of the crescent-curved puma moon exactly above the slit in the pedestal in the centre of the body of September and under the corona of the day signs of this twelfth of the year. This puma moon sits on a sign (Figs. 91, 93, 94 and 96) that very clearly indicates the sex of the lady September, namely on the so-called "female" sign, as Professor Posnansky calls it. This gender sign therefore means "*womb*" for short. To the right and left of this "Leib" sign are two upright poles ending in condor heads. They point very clearly to the large, upright poles that the September figure holds in her hands as a sceptre. It is therefore evidently a brief repetition of the larger body of September with its two sceptres, just like the inscription on the staircase plinth, and the artist has emphasised that it is a repetition of the entire *body* with head and sceptres. Mind you, only the body with head and sceptres, for the aureole around the September sceptre is bound with a band around the chin and forehead and is intended to be spatially separated from the body. It was therefore out of the question to include the symbols on this aureole band, but only the other symbols, otherwise the sculptor would not only have named the *sceptres* separately, but also the *aureole*. In and of themselves, the sceptres do not belong to the body, but since the signs on these sceptres were also to be counted, they were called special. So the observer had it

It was only necessary to follow the pictograph instructions on the body of the September figure literally, and he could no longer make any mistakes in the counting method. And since the puma moon stands on the body of the September figure, this pictorial writing does indeed dispel the last doubts about the counting method of the 38 crescent moon cycles of the post-stationary Tihuanaku period and says something like the following: *"I, the puma month, am to be found on the body of September, but also on the sceptres to the right and left of the September figure, which are placed strictly vertically."*

If the observer now followed these very clear instructions, there could no longer be any doubt. All he had to do was to follow the instructions *slavishly* and count the orbital signs. He then found the correct number of cenomoon orbits in the twelfth of September and thus that of all the other twelfths of the year, because they were the same. *He found the correct number 38 for the lunar orbits in the twelfth of the year!*

Could this also be a coincidence? Or should it be the violent invention of a man who wants to interpret the calendar of the Tihuanaku Sun Gate at all costs? If so, then the coincidences are piling up quite alarmingly!

No, the interpretation of this inscription is not forced either, it emerged of its own accord once the interpretation of the inscription in the base had been found. The three clues as to where to find the circumambulations of the caenomoon for each year and each twelfth of the year and how to count them are of such compelling logic that the method of depiction on the chandelier must be called ingenious. The sculptor obviously attached the greatest importance to the fact that the signs of the moon's orbit in September could also be easily found and correctly counted, which is why he even pointed out twice, once on the pedestal through the "road" upwards to September, and then on the September body itself, that in the case of the moon's orbit in the twelfth of September only the signs on the body of September were to be counted, but also on the sceptres. Since he mentions the *sceptres* in particular, but *not* the "feathers" of the corona, the reference is clear.

M. In my opinion, the tertiary sculptor has set down his intention so clearly that even the quaternary, i.e. today's observer, can follow these indications with ease, despite his generations-long weaning from the ability and practice of reading pictorial inscriptions.

The world ice theory demands the following for the equilibrium state of the post-stationary tertiary period (stage 24 of Fig. 88)

447 caenomoon orbits in the solar year and
38 (37.2) crane moon cycles in the twelfth of the year.

The stone calendar of Tihuanaku shows

447 caenomoon orbits in the solar year and
38 (37.2) crane moon cycles in the twelfth of the year.

It therefore completely fulfils these requirements of the world ice theory, *namely one hundred percent*, and the base states that the 447 and 38 signs found are the actual cenomoon orbits.

One thing should therefore remain uncontested:

The interpretation of the inscriptions on the pedestal of September and on the body of September itself is *only* correct and understandable with regard to the tertiary lunar orbits found, and is therefore *only* possible on the basis of the tertiary, real months.

In all other cases, the pedestal remains silent and the puma moon on September's body incomprehensible, and with it the two pictorial writings in general.

Here, however, in the centrepiece of the Tertiary calendar of Tihuanaku, the inscriptions speak simply and clearly, and we too can only understand them from the Tertiary period of the Tihuanaku period. The inscriptions say only a few words, but they do so with a certain humour that seems to indicate the satisfaction of the prehistoric sculptor at having depicted the difficult problem of representing 447 real months in the year and 38 real months in the twelfth of the year as ingeniously and as comprehensibly as possible.

Now that we have found the twelfths of the year, the solstices, the equinoxes of the tertiary solar year, now that we have also succeeded in finding the number of days in the twelfth of the year and in the year, now that the sculptor has even clearly placed the number of months, i.e. the real orbits of the moon, on the calendar, one is almost afraid to demand even more accuracy from this stone calendar. But perhaps the artist suffered from the small inaccuracy that he could not quite master in his own way, namely the indication of 38 months in September, when he knew exactly that it was in reality about 37.2 months. The fact that here, too, he missed

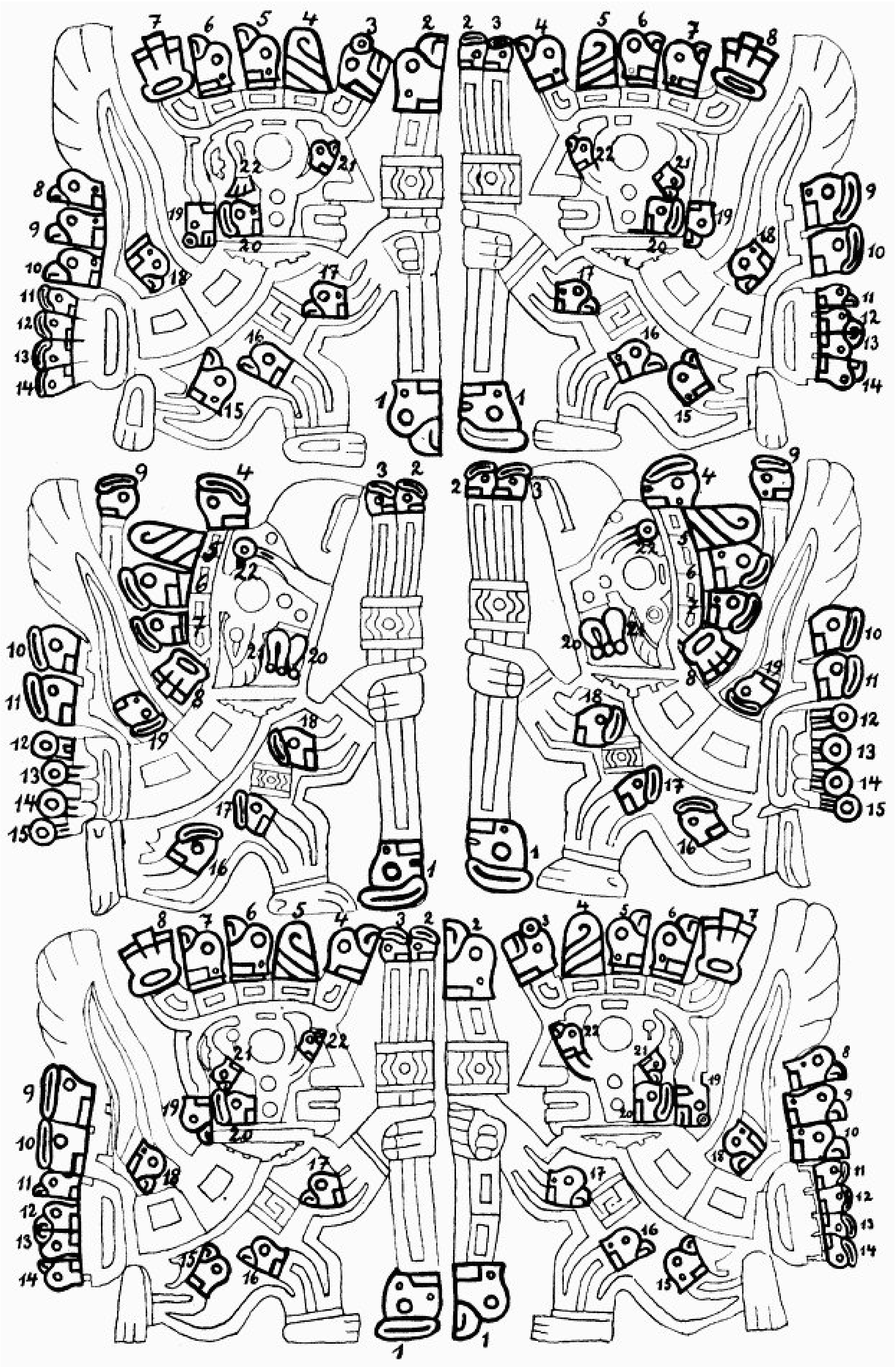


Fig. 99. Drawing of a row of winged sceptre-bearers next to the main figure of the twelfth of September in the calendar frieze of the Sun Gate of Tihuanaku, with counting instructions. The numbers and symbols are emphasised.

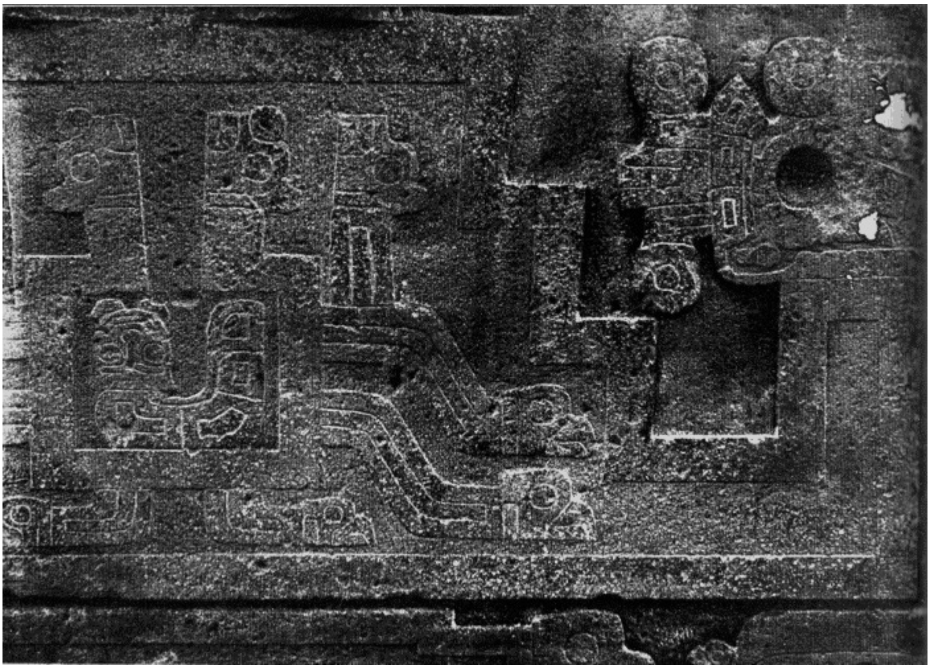
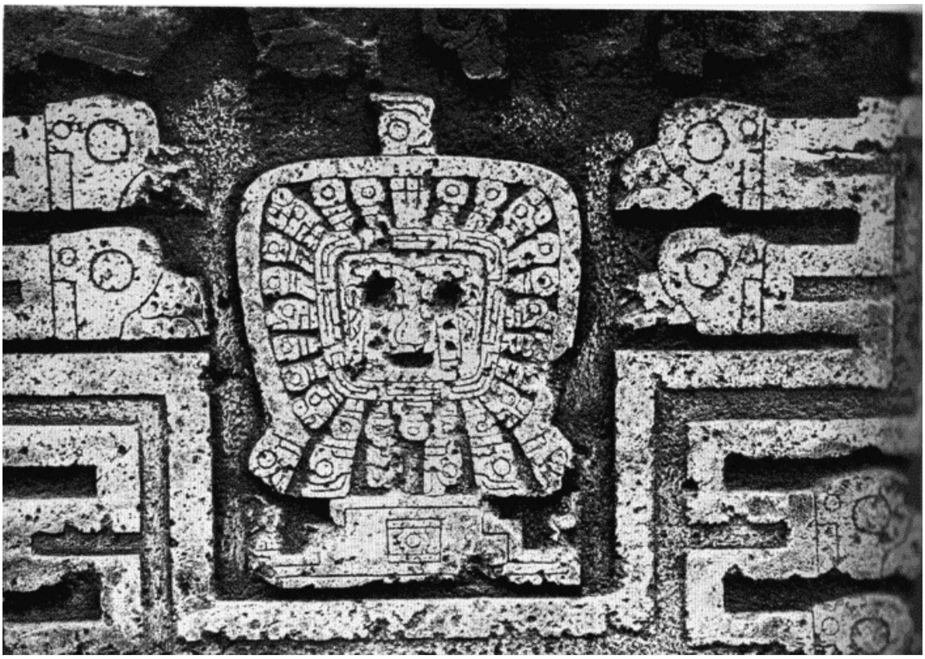


Fig. 100 Photograph of the right part of the base of the main figure September in the centre of the chapel frieze on the Sun Gate of Tihuanaku. On the left, the crescent-shaped puma moon can be seen sitting in its box. The puma's head is recognisable as such by the whiskers at the front of its mouth.
Phot. Professor Arthur Posnansky in La Paz.

Fig. 101: Photograph of the twelfth of November (July) in the meander band of the calendar frieze on the sun gate of Tihuanaku. Phot. Professor Arthur Posnansky in La Paz.



The fact that the author has sought to create complete clarity seems to stem from the manner of presentation.

We actually counted the twelfths of the year in the wrong order above. We started with January and ended with December. This was a concession to the way we count today. However, the Tihuanaku calendar starts with its own beginning of the year, with September, the twelfth of the year at the beginning of spring, and then counts to the left. To the left because the position of the sun gate in relation to the real sun simply required counting to the left. In the same counting direction, the individual signs of the month on the September sign together with the sceptres are then logically to be counted through, so that the
38th sign can be found at the top left of the left sceptre of the September figure (Fig. 91). This sceptre is decorated with a diamond cut, rectangular fields. All these diamond cuts are rectangular, except the top one next to the 38th sign! In place of the rectangular field there is *an ornamental recess in the form of a moon that is not quite half full.*

Since nothing on this calendar seems to have been created by chance, one could recognise an indication that only half or even only a third of the 38th caenomoon orbit of September is present, which is indeed the case. This could be the end of the accuracy of the representation.

But what if the tertiary artist was still not satisfied?

Within the meander frieze there are obviously two very clear pictorial inscriptions which speak in favour of 37, and not 38, orbits of the caenomoon in the twelfth of the year, and the reader may well be interested in examining these pictorial inscriptions as well.

These are the twelfths of the year, July and November, enclosed by *veils* (Fig. 101). At the top of each of the two veils is a *fish head* as a coat of arms. However, the fish is not only a symbol of rain and water, but also, like the puma and the double circle on the ribbon, a symbol of the *moon*.

Each of these symbols thus seems to say. *"If you, observer, want to know the orbits of the moon in the twelfths of July and November, this time you must count all 24 signs of the day, which I expressly include with my veil for this purpose."*

Counting *all the* signs*,* including the 24 day signs in the twelfths of July and November, results in *the number* 37!

This seems to be an explanation for the fact that September shows 37.5 revolutions according to the above explanations, if one wants to recognise the indicative crescent moon next to the 38th sign on the September sceptre at the top left.

However, if we have the orbits 37.5, 37 and 37 in three annual twelfths, we arrive at an average of 37.2 orbits, or more precisely 37.17 orbits, which characterise the actual orbits in the annual twelfth with sufficient accuracy.

We have thus discovered the method by which the tertiary sculptor was able to express fractures.

This would also eliminate the slight inaccuracy of the September count.

This last interpretation should certainly not be insisted on, if only because the accuracy is precise enough for a stone inscription calendar even without the last interpretation, but in connection with the other results of the calendar decipherment and in connection with the previous "coincidences" it remains striking.

We have thus deciphered the annual calendar of Tihuanaku on the basis of Hanns Hörbiger's theory of world ice, a calendar that yields far more than is usual in our modern calendars. We can therefore be satisfied and close the book on the riddle of the greater Titikaka lake.

But the Sun Gate Calendar is even richer! What remains is the triple frieze of winged and sceptre-bearing figures to the right and left of the main figure of September, which also bears 660 independent individual characters that have yet to be deciphered.

It is expressly pointed out at this point that the deciphering of the actual annual calendar has thus been completed, a deciphering which was based on clear instructions from the sculptor and in which doubts of an essential nature can therefore not arise.

The situation is different with the following deciphering of the table of the winged sceptre bearers to the right and left of the main figure September. Everything that is now presented in terms of interpretation or decipherment is merely the author's assumption. There is no clear indication on the entire calendar that the decipherment is to be made in this way and not otherwise.

There are also ambiguities within the figures themselves, some of which are mentioned later. The methods used to decipher the frieze of winged figures are the same as those used for the annual calendar. There is therefore a probability that the interpretation is correct, but no more. No particular importance is therefore attached to this interpretation, because it is quite sufficient to have discovered the secret of the extremely rich annual calendar, the interpretation of which already approaches a proof from the content of the pictorial writings. The additional frieze of the winged figures is therefore only dealt with in the following for the sake of completeness, without the author being able to provide evidence from the calendar's pictorial writings themselves that only the interpretation given is correct.

This frieze of winged figures is considered by the author to be a table, specifically a secondary table for the representation of caesarean hours and tertiary minutes.

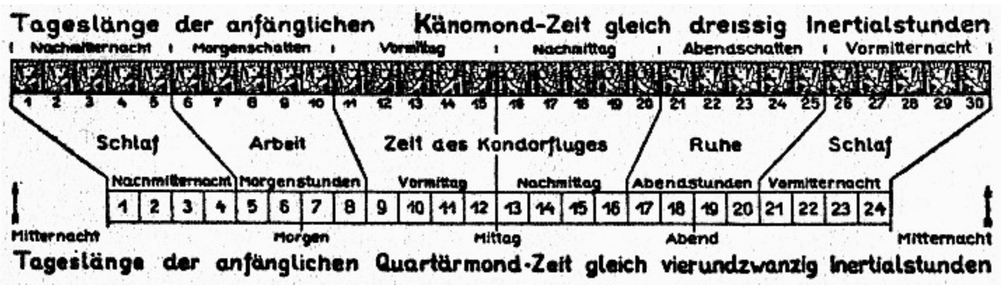

Tageslänge der anfänglichen Känomond-Zeit gleich dreissig Inertialstunden
Nachmitternacht
Morgenschatten
Vormittag
Nachmittag
Abendschatten
Vormitternacht
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Schlaf
Arbeit
Zeit des Kondorfluges
Ruhe
Schlaf
Nachmitternacht
Morgenstunden
Vormittag
Nachmittag
Abendstunden
Vormitternacht
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Mitternacht
Morgen
Mittag
Abend
Mitternacht
Tageslänge der anfänglichen Quartärmond-Zeit gleich vierundzwanzig Inertialstunden

Fig. 102 Comparison of the division of today's and tertiary hours. Drawing by Hanns Hörbiger in Mauer near Vienna.

The creator of the world ice theory in Mauer near Vienna, Hanns Hörbiger, made a striking drawing for this publication, which is shown in Fig. 102. It shows the 30 tertiary hours of the longer day. The twenty-four inertial hours of today have been drawn down for comparison. Today runs from midnight to midnight and is divided into 4 hours "morning", 4 hours "forenoon", 4 hours "afternoon", 4 hours "evening" and 4 hours "midnight". This was done in order to be able to apply the same division to the 30 hours of the tertiary calendar, on which 5 hours occur in each section that has 4 hours on the 24-hour table of today's time, i.e. tertiary hours, not today's hours. These tertiary hours are similar in length to ours, but not the same. According to the calendar, the tertiary day has 30.2 hours *today.*

The individual hours of the 30-hour table are winged and, as the author believes, contrary to Posnansky's view, are shown continuously, because the hour "*runs out*" and "*flies by*". The possible symbolic meaning of the thirty tertiary hours can easily be read from the drawing in Fig. 102. Whether the symbolic explanation of the 10 condor-headed figures as hours of the day when the royal birds cavort in the warm sun is correct cannot of course be asserted, but it is not unlikely. The running and winged human figures would therefore be the embodiment of the hours of darkness and the dawn. However, this symbolic interpretation should not be taken as irrefutably correct.

It should be emphasised once again that the thirty tertiary hours are *not* today's hours. The exact correspondence would also be conceivable under certain circumstances, but then the year of the Tertiary calendar would have to have had two more days, i.e. not 290 but 292 days. However, they are not present on the calendar, but only 290 by calculating the "flying" fish.

One could now be satisfied with the division of the Tihuanaku stone calendar into annual twelfths, days, hours and months and finalise its interpretation. However, it seems that the carver of the hour frieze had not yet finished defining the 30 hours of his day and had gone further in the subdivision.

For on the individual winged and running sceptre-bearers, on those with human heads as well as on those with condor heads, there are again various signs which we know from the annual calendar as numerical signs, irrespective of their other probably very simple symbolic meaning, except that the sign of a shell is added to the previously known signs. If up to now all numerical signs could be interpreted as units - sign = 1 - then it can be concluded by analogy that the individual independent signs on the bodies and on and in the heads of the hour figures should also represent numerical units, especially as the same number of signs obviously appears on all figures, with some uncertainties which will be explained below.

This same number of signs also appears where it was once difficult to place them due to lack of space. There are 660 independent characters, which are placed in groups of 22 characters each on the individual figures (Figs. 79, 80 and 99). This time the counting is in all

This is particularly easy in the case of the common figures and can be clearly seen in Fig. 99. The sculptor's clear intention to apply 22 symbols to each of the 30 figures should be emphasised. And where it did not quite work out, for example on the condor's head in the "praying" pose (Fig. 85), he changed his mind. Since the condor head in Fig. 85 is depicted with its beak stretched upwards, the small condor head or toxodon head, which the human heads in Fig. 86 have on the back of the neck, could no longer be added at this point on the neck. In place of this neck head sign, the artist chiselled a fish head (Fig. 85) on the inside of the raised large wings between the large condor head and the large wing as a replacement for the neck sign, and the intended and necessary number of numerical signs was restored.

If a symbol was missing from the sceptre on the uppermost human figure in Fig. 86, it was added to the back of the wing in order to restore the desired number of symbols. The intention is therefore very clear: to always provide the same number of characters.

In this way, there are 22 characters on each figure, making a total of 660 characters on all figures. If these, like all the other independent numerical signs on the Sun Gate frieze, are to be understood as independent numerical signs - sign = 1 - and logically they must be, then they can only have the purpose of dividing the hour into 22 subdivisions, i.e. into somewhat long tertiary minutes, each about 2.72 minutes long. Since, logically, the minutes must sit on the hours, doubts can hardly arise.

Nevertheless, this explanation should not be insisted on, since on some figures with human heads the small condor head on the eye shield of the head is replaced by a three-split sign, which is already known to us as a sign from the three splits of the year frieze (Fig. 86). However, this three-split on the eye shield looks very much like a tiny wing, at least in the photograph in Fig. 86. Since the winged eyes do not belong to the independent numerical signs, but symbolically symbolise the flying gaze, i.e. are symbols of the passing of time, there would be one sign too few in these few figures, where instead of the condor's head there is a tiny wing on the eye shield, i.e. instead of 22 signs there are only 21. Just as well, however, in view of the considerable weathering of the original with the small three-split symbol, it is not a wing but a puma crown, a three-

The author would like to assume that this is probably the case. It should only be pointed out that in the other cases the sculptor clearly endeavoured to depict the number 22 exactly on every hour runner, even in cases where he quite inorganically and somewhat inartistically left a fish head protruding from the back of a wing in order to make the number 22 full. The author considers the possibility of error on the part of the sculptor to be ruled out in the case of such a precise and logically constructed calendar, for the sculptor, even if he left the chiselling of some of the hour figures to a pupil, will have checked the number of characters for accuracy under all circumstances. After all, it was a calendar made of stone, which did not have to be wrong, but completely correct.

Presumably, therefore, the tiny three-slit is a number sign after all and only bears a close resemblance to a little wing, which can also easily be depicted as a three-slit. And if the reader agrees with this assumption, then the minute calendar is also correct.

Perhaps the reader will wonder how the Tihuana people measured these minutes? Of course, it is not clear from the calendar how they did it, but if we think of our hourglasses, which are sometimes still used by our housewives today to boil eggs, we could imagine that the tertiary minutes were measured in a similar way.

This concludes the description and explanation of the stone calendar on the sun gate of Tihuanaku.

It can be said that, according to the author's interpretation based on the world ice theory, the stone calendar should be an almost complete proof for the inclined beach line of Tihuanaku, just as the inclined beach line became a proof for the stone calendar. Both the beach line and the calendar, which is located in its vicinity, are mutually dependent.

No arbitrariness and no interpretative mania led to the result that this third section of the riddle of the larger Lake Titicaca brings, but rather the application and strict realisation of the theory of the engineer Hanns Hörbiger vom Welteise. And the rigorous realisation of the mutual proof led to a surprising success.

The joke of a sceptical friend that the Sun Gate was probably carved by an enthusiastic follower of the world-ice doctrine gets to the heart of the matter, despite the powerless mockery it is supposed to contain. It is true that the

The sculptor of the stone calendar of Tihuanaku lived quite some time before Hanns Hörbiger and died only a little shorter, but a follower of the world ice theory can *indeed* not carve such a stone tertiary calendar better than that prehistoric stonemason did. He may therefore be regarded as the oldest supporter of the theory of world ice, and one can certainly put up with such an intelligent, indeed ingenious fellow. To summarise, the two interpretations presented in this section of the decipherment of the ideographs of the Sun Gate of Tihuanaku are briefly summarised once again.

1. Posnansky's interpretation on an actualistic, quaternary, i.e. present-day basis. Only the explanation of the months, which in this case would be months of the same kind as our present-day months, seems successful. Less successful seems the interpretation of the 3 decade-weeks, which, if they could be recognised, would only fill out the year imprecisely, are illogically separated from the months and must cause the observer a lot of mental arithmetic and headaches. Posnansky assumes 5 or 6 uncounted days, but these are not shown and must therefore be added. The separation of the day table in Posnansky's sense from the month anthems is misleading and illogical. The interpretation of the solstices and the equinoxes is Posnansky's work. Not interpreted are the 288 or 290 signs around the antefixes of the yearly table, not interpreted is the total number of 447 signs on the yearly calendar without the table of the winged scepter-bearing figures. Also uninterpreted are the 660 signs in the table of winged and kneeling sceptre-bearers. According to Posnansky, all these signs, totalling 1107, have only a symbolic meaning. There is no more detailed explanation of this.
2. Interpretation by the author on the basis of Hanns Hörbiger's world ice theory. Solar year with 12 annual twelfths, solstices and equinoxes, plus 290 longer tertiary days of 30 tertiary hours of 22 tertiary minutes. 447 lunar orbits in the solar year, i.e. real months, 37.2 lunar orbits (real months) in the annual twelfth, 204 solar eclipses per solar year and 17 solar eclipses per annual twelfth. Interpretation of the inscriptions in the base of September, on the body of the September figure and the "veil" twelfths of July and November. Origin of the gate and its frieze in the post-stationary Tertiary period of stage 24 of drawing 533 (Fig. 88), the time of the

inclined `Y-beach line` when Tihuanaku was a harbour town on the bay of Tihuanaku and experienced its main construction period. All 1107 lines have been used for explanation.

In addition, a brief comparison of the author's interpretations with regard to the approximation accuracy of the values in drawing 533 (Fig. 88) is provided.

Stage 24 of the Drawing 533	**Stage 24 Sun gate**	**Percentage Approach**
T = 29.4 h	T = 30.2 h	97,35%
Mt = 19.6 h	Mt = 19.6 h	100,00%

There is no need to mention a few characters that cannot be numerals:

1. According to Posnansky's research, these two signs signify "male" and "female" gender. They are placed on the bases of the year-twelfths and very clearly on the figures, so that there can be little doubt about the accuracy of the interpretations.
2. Compound signs. These are the bonnets above the twelve-quarter points of the year. They may have a symbolic meaning, may even be designations of constellations of the zodiac, as Posnansky believes. However, we can no longer decipher them with sufficient accuracy from the artist's pictorial script, with the exception of the "veil bonnet" in Fig. 101 (cf. page 185). An attempt to interpret the symbols of the bonnets of the coats of arms of the twelfth anniversaries follows below.
3. The sign of the winged eye. According to Posnansky, it means the distant gaze of the eye, in a figurative sense also the winged time.
4. The staircase base symbol. According to Posnansky, it is the symbol of the earth, which the Tihuanakumen man supposedly imagined to be stepped. He may have been led to this by the structure of the stepped Cordillera, but perhaps also by the mountains of his homeland, which are covered with countless stepped fields.

The reader will probably agree with the author in the conviction that the signs mentioned under 1 to 4, especially in their compositions, can hardly have any meaning as numbers, and will realise the reason why they could not be interpreted as numbers in the interpretation of the calendar frieze, as was done with the other, independent individual signs, the heads, moons, triple columns and shells.

With regard to number 2, composite signs, an attempt at a symbolic interpretation of the coats of arms above the twelfths of the year is presented. The reader is asked to follow these attempts at interpretation on the basis of Fig. 82, attempts at interpretation that are not concerned with the payment of the signs, but with their symbolic meaning.

1. January.	The crest consists of four fish heads standing next to each other, symbolising water, rain and the moon. Presumed meaning: *rainy season*.
2. February.	The crest consists of a condor brooding on (lunar) eggs, on the condition that the bal- ken above the (lunar) eggs is an unfinished or mutilated condor. Probable meaning: *condor breeding season*.
3. March.	No crest available.
4. April.	Condition as for 2. presumed meaning: *Condor breeding season*.
5. May.	Labelling as for 1. presumed meaning: *rainy season*.
6. June.	Trumpeter's bonnet. Probable meaning: *winter solstice*.
7. July.	Veil dome. Presumed meaning: *Twelfth of the year with 37 lunar orbits.*
8. August.	Double condor bonnet. Presumed meaning: *mating season of the condor.*
9. September.	No crest available.
10. October.	Cap as in 8. presumed meaning: *Mating season of the condor.*
11. November.	Cap as for 7. Probable meaning: *Twelfth of the year with 37 lunar orbits.*
12. December.	Cap as in 6. presumed meaning: *summer solstice.*

This means that the attempt to explain the stone calendar of Ti- huanaku is probably based firstly on actualistic, but then above all on the basis of tertiary post-stationary states using Hanns Hörbiger's theory of world ice, an attempt that cannot and will not claim to be a mathematical proof. Only the very high probability of the correctness of the interpretation should be pointed out. If the findings of the astronomical and calendrical conditions at the time of the `Y strand line` and the simultaneous harbour city of Tihuanaku on its "sloping" shores tell us that the

1. *Daily duration about 29.4 hours today,*
2. *Number of these days in a solar year about 298,*
3. *Cenomoon orbits per solar year about 447,*
4. *Cenomoon cycles per annual twelfth about 37 to 38,*
5. *About 200 solar eclipses per solar year (estimated)*

(see page 113), according to the solar calendar found in the ruins of the city on the leaning lake.

1. *Daily duration about 30.2 hours today,*
2. *Number of these days in the solar year 290,*
3. *Cenomoon orbits per solar year 447,*
4. *Cenomoon cycles per annual twelfth 37.2,*
5. *solar eclipses per solar year 204.*

Whether, after this comparison, Professor Pos-nansky's interpretation, which approaches the riddles of the sun frieze on an actualistic, i.e. modern basis, is useful, or whether it is the author's interpretation based on the tertiary conditions using the theory of the world ice theory, may be left to the critical reader.

Perhaps, however, when reading this third and concluding part of the book on the riddle of the larger Lake Titicaca, the sceptical reader has also come to suspect that, on the basis of Hanns Hörbiger's world ice theory, problems can be brought closer to a solution that defy the scientific armoury of the actualistically minded researchers of our day. Until about the beginning of this section, the sceptic could still say that the continent of South America had nevertheless tilted, had nevertheless risen and then sunk and risen again, had tilted again and then become horizontal, and yet in the Tertiary period lifted the salty remains of the sea together with fauna and flora to a height of 4000 metres above sea level, he will, as the author hopes, have at least - become thoughtful when reading the section on the Sun Gate of Tihuanaku and the attempt to unravel its ideographies.

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Corrections of the scanner

P. 12, 4 : `Toba volkanika - Toba volcanica`
P. 93, 18: `Toba volkanika - Toba volcanica`
P. 97, 19: `Toba volkanika - Toba volcanica`
p. 192, 3 : pulled up - pulled up